Melbourne Water Corporation

Area 4A of Riverwalk Estate, Princes Highway, Werribee, Victoria

Environmental Audit

March 2013

ENVIRONMENT PROTECTION ACT 1970

Statement of Environmental Audit

I, Dr Fouad Abo of GHD Pty Ltd 180 Lonsdale Street Melbourne, a person appointed by the Environment Protection Authority ('the Authority') under the Environment Protection Act 1970 ('the Act') as an environmental auditor for the purposes of the Act, having:

1. been requested by Mr Timm Kurth of Melbourne Water Corporation to issue a certificate of environmental audit in relation to the site located at Riverwalk Estate, Princes Freeway, Werribee, located in the Wyndham City Council, comprising the land defined by part of Lot B on Plan of Subdivision 636839Q, derived from Certificate of Title Volume 11367, Folio 778, (the surveyed site boundary and the relevant boundary coordinates are defined on the attached Figure 3), owned/occupied by Melbourne Water Corporation.
2. had regard to, amongst other things,
   i. guidelines issued by the Authority for the purposes of Part IXD of the Act,
   ii. the beneficial uses that may be made of the site, and
   iii. relevant State environment protection policies/industrial waste management policies, namely: State environment protection policy (Prevention and Management of Contamination of Land) 2002, State environment protection policy (Groundwaters of Victoria) 1997, State environment protection policy (Waters of Victoria) 2003, and State environment protection policy (Air Quality Management) 2001.

   in making a total assessment of the nature and extent of any harm or detriment caused to, or the risk of any possible harm or detriment that may be caused to, any beneficial use made of the site by any industrial processes or activity, waste or substance (including any chemical substance), and
3. completed an environmental audit report in accordance with section 53X of the Act, a copy of which has been sent to the Authority and the relevant planning and responsible authority.

HEREBY STATE that I am of the opinion that:

The site is suitable for the beneficial uses associated with:

Parks and Reserves; Agricultural; Sensitive use (i.e. high density, medium and single dwelling/low density residential use, child care centre, pre-school or primary school); Recreation/Open space; Commercial; and Industrial.

subject to the following conditions attached thereto:

1. The two east-west and one north-south asphalt sealed roads and the two car parks present in the southern portion of the site, as identified in this audit report (see the attached Figure 3) must be removed and disposed of in accordance with relevant regulations and guidelines.
2. The portion of the former pond that is part of this site (as identified in this audit report and Figure 3) is levelled with clean fill in accordance with EPA classification of waste (i.e. publication 448.3).
3. Any fill or soil brought to the site must be chemically tested soil or fill that classifies as "fill material" in accordance with relevant EPA guidelines.

The condition of the site is detrimental or potentially detrimental to any (one or more) beneficial uses of the site. Accordingly, I have not issued a Certificate of Environmental Audit for the site

in its current condition, the reasons for which are presented in the environmental audit report. The terms and conditions that need to be complied with before a Certificate of Environmental Audit may be issued are set out as follows:

- Any unsuitable material located on site (i.e. the two roads and two car parks stated in conditions 1 above) must be removed in accordance with relevant EPA guidelines.

Other related information:

- Waste generated in the future as a result of the future development works should be dealt with in accordance with relevant EPA guidelines.
- The two groundwater monitoring wells (MW-7 and MW-8 as listed in the attached Figure 3) present at the site should be decommissioned in accordance with the requirement of the most recent version of "Minimum Construction Requirements for Water Bores in Australia", published by National Uniform Drillers Licensing Committee.

This Statement forms part of the Environmental Audit report: *Melbourne Water Corporation, Area 4A of Riverwalk Estate, Princes Highway, Werribee, Victoria, March 2013*. Further details regarding the condition of the site may be found in the Environmental Audit Report.

DATED: 14 March 2013

SIGNED: .....

DR FOUAD ABO

ENVIRONMENTAL AUDITOR
(Appointed Pursuant to the Environment Protection Act 1970)

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 11367 FOLIO 778 Security no : 124043522685M
Produced 17/10/2012 04:20 pm

LAND DESCRIPTION

Lot B on Plan of Subdivision 636839Q.
PARENT TITLE Volume 11309 Folio 105
Created by instrument PS636839Q 02/08/2012

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
MELBOURNE WATER CORPORATION of 990 LA TROBE STREET DOCKLANDS VIC 3008
PS636839Q 02/08/2012

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

NOTICE as to part Section 47(2) Heritage Act 1995
REGISTER NO. 1884
X234908X 29/12/2000

AGREEMENT Section 173 Planning and Environment Act 1987
AG017913K 08/08/2008

DIAGRAM LOCATION

SEE PS636839Q FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER		STATUS	DATE
PS636839Q (S)	PLAN OF SUBDIVISION	Registered	02/08/2012

DOCUMENT END

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO	LRS USE ONLY	PLAN NUMBER
———	EDITION 1	PS 636839Q

LOCATION OF LAND

PARISH: MAMBOURIN
TOWNSHIP: WERRIBEE
CROWN ALLOTMENTS: 22A (PART) & 10A (PART)

PARISH: MAMBOURIN
CROWN ALLOTMENTS: 4A, 5A, 6A, 7A, 8A & 9A
CROWN ALLOTMENTS: G (PT) & H (PT) SECTION 7
CROWN ALLOTMENT: 7 (PT) & 8 (PT) SECTION 8

LAST PLAN REF: PS 641301K LOT A
TITLE REFERENCE: VOL 11309 FOL 105

POSTAL ADDRESS: CNR PRINCES HIGHWAY & MALTBY BYPASS
WERRIBEE 3030

MGA CO-ORDINATES: E 292 680
OF APPROX. CENTRE N 5 800 580
OF LAND IN PLAN ZONE 55

VESTING OF ROADS OR RESERVES

IDENTIFIER	COUNCIL/BODY/PERSON
R1 (ROAD)	WYNDHAM CITY COUNCIL
RESERVE No.1	POWERCOR AUSTRALIA LTD

COUNCIL CERTIFICATION AND ENDORSEMENT

COUNCIL NAME: WYNDHAM CITY COUNCIL REF:

(1) THIS PLAN IS CERTIFIED UNDER SECTION 6 OF THE SUBDIVISION ACT 1988.

(2) THIS PLAN IS CERTIFIED UNDER SEC. 11(7) OF THE SUBDIVISION ACT 1988.
DATE OF ORIGINAL CERTIFICATION UNDER SECTION 6 / /

(3) THIS IS A STATEMENT OF COMPLIANCE ISSUED UNDER SECTION 21 OF THE SUBDIVISION ACT 1988

OPEN SPACE:

(A) A REQUIREMENT FOR PUBLIC OPEN SPACE UNDER SECTION 18 OF THE SUBDIVISION ACT 1988 HAS NOT BEEN MADE

(B) THE REQUIREMENT HAS BEEN SATISFIED

(C) THE REQUIREMENT IS TO BE SATISFIED IN STAGE:

COUNCIL DELEGATE
COUNCIL SEAL
SURVEYOR'S PLAN VERSION
DATE / /

RE-CERTIFIED UNDER SECTION 11(7) OF THE SUBDIVISION ACT 1988
COUNCIL DELEGATE
COUNCIL SEAL
SURVEYOR'S PLAN VERSION
DATE / /

NOTATIONS

DEPTH LIMITATION:
DOES NOT APPLY

THIS IS A SPEAR PLAN

STAGING:
THIS IS NOT A STAGED SUBDIVISION
PLANNING PERMIT NO: WYP4474/10

SURVEY:
THIS PLAN IS BASED ON SURVEY (PS 636838S)
THIS SURVEY HAS BEEN CONNECTED TO PERMANENT MARKS:
IN PROCLAIMED SURVEY AREA NUMBER:

OTHER PURPOSE OF PLAN:
TO REMOVE PART OF EASEMENT E-6 ON PS 641301K AND CREATED IN PS 636838S AND AFFECTING ROAD R1 ON THIS PLAN.

GROUNDS FOR EASEMENT REMOVAL:
WYNDHAM CITY COUNCIL
PLANNING PERMIT No. WYP4613/10

LOTS 1 TO 117 (BOTH INCLUSIVE) & LOT A HAVE BEEN OMITTED FROM THIS PLAN

RIVERWALK RELEASE 2

EASEMENT INFORMATION

LEGEND: A - APPURTENANT EASEMENT E - ENCUMBERING EASEMENT R - ENCUMBERING EASEMENT (ROAD)

EASEMENT REFERENCE	PURPOSE	WIDTH (METRES)	ORIGIN	LAND BENEFITED/IN FAVOUR OF
			SEE SHEET 2	

LRS USE ONLY

STATEMENT OF COMPLIANCE
EXEMPTION STATEMENT
RECEIVED ☑
DATE 23/07/12

LRS USE ONLY

PLAN REGISTERED
TIME 11:17am
DATE 2/08/12
G Venn
ASSISTANT REGISTRAR OF TITLES

SHEET 1 OF 12 SHEETS

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE: DIGITALLY SIGNED

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO ——

PLAN NUMBER **PS 636839Q**

EASEMENT INFORMATION

LEGEND: A - APPURTENANT EASEMENT E - ENCUMBERING EASEMENT R - ENCUMBERING EASEMENT (ROAD)

EASEMENT REFERENCE	PURPOSE	WIDTH (METRES)	ORIGIN	LAND BENEFITED/IN FAVOUR OF
E-1	SEWERAGE	3	PS412756U	CITY WEST WATER LIMITED
E-2	SEWERAGE	2.50	PS636838S	CITY WEST WATER LIMITED
E-3	DRAINAGE	3	PS641301K	WYNDHAM CITY COUNCIL
	SEWERAGE	3	PS641301K	CITY WEST WATER LIMITED
E-4	SEWERAGE	2	PS641301K	CITY WEST WATER LIMITED
E-5	DRAINAGE	2	PS641301K	WYNDHAM CITY COUNCIL
E-6	DRAINAGE	SEE PLAN	PS636838S	WYNDHAM CITY COUNCIL
	SEWERAGE	SEE PLAN	PS636838S	CITY WEST WATER LIMITED
E-7	DRAINAGE	SEE PLAN	PS636838S	WYNDHAM CITY COUNCIL
E-8	SEWERAGE	2	PS636838S	CITY WEST WATER LIMITED
E-9	DRAINAGE	2	PS636838S	WYNDHAM CITY COUNCIL
E-10	POWERLINE	SEE PLAN	PS636838S - SEC 88 ELECTRICITY INDUSTRY ACT 2000	POWERCOR AUSTRALIA LTD
E-11	DRAINAGE	2	THIS PLAN	WYNDHAM CITY COUNCIL
E-12	SEWERAGE	2	THIS PLAN	CITY WEST WATER LIMITED
E-13	DRAINAGE	3	THIS PLAN	WYNDHAM CITY COUNCIL
	SEWERAGE	3	THIS PLAN	CITY WEST WATER LIMITED
E-14	DRAINAGE	SEE PLAN	PS636838S	MELBOURNE WATER CORPORATION
E-15	SEWERAGE	2.50	PS636838S	CITY WEST WATER LIMITED
	DRAINAGE	2.50	PS636838S	MELBOURNE WATER CORPORATION
E-16	DRAINAGE	4	THIS PLAN	WYNDHAM CITY COUNCIL
E-17	SEWERAGE	2	THIS PLAN	CITY WEST WATER LIMITED
E-18	DRAINAGE	SEE PLAN	THIS PLAN	WYNDHAM CITY COUNCIL
	SEWERAGE	SEE PLAN	THIS PLAN	CITY WEST WATER LIMITED
E-19	DRAINAGE	SEE PLAN	PS636838S	MELBOURNE WATER CORPORATION
	SEWERAGE	SEE PLAN	THIS PLAN	CITY WEST WATER LIMITED
E-20	POWERLINE	1.50	THIS PLAN - SEC 88 ELECTRICITY INDUSTRY ACT 2000	POWERCOR AUSTRALIA LTD

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 2

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

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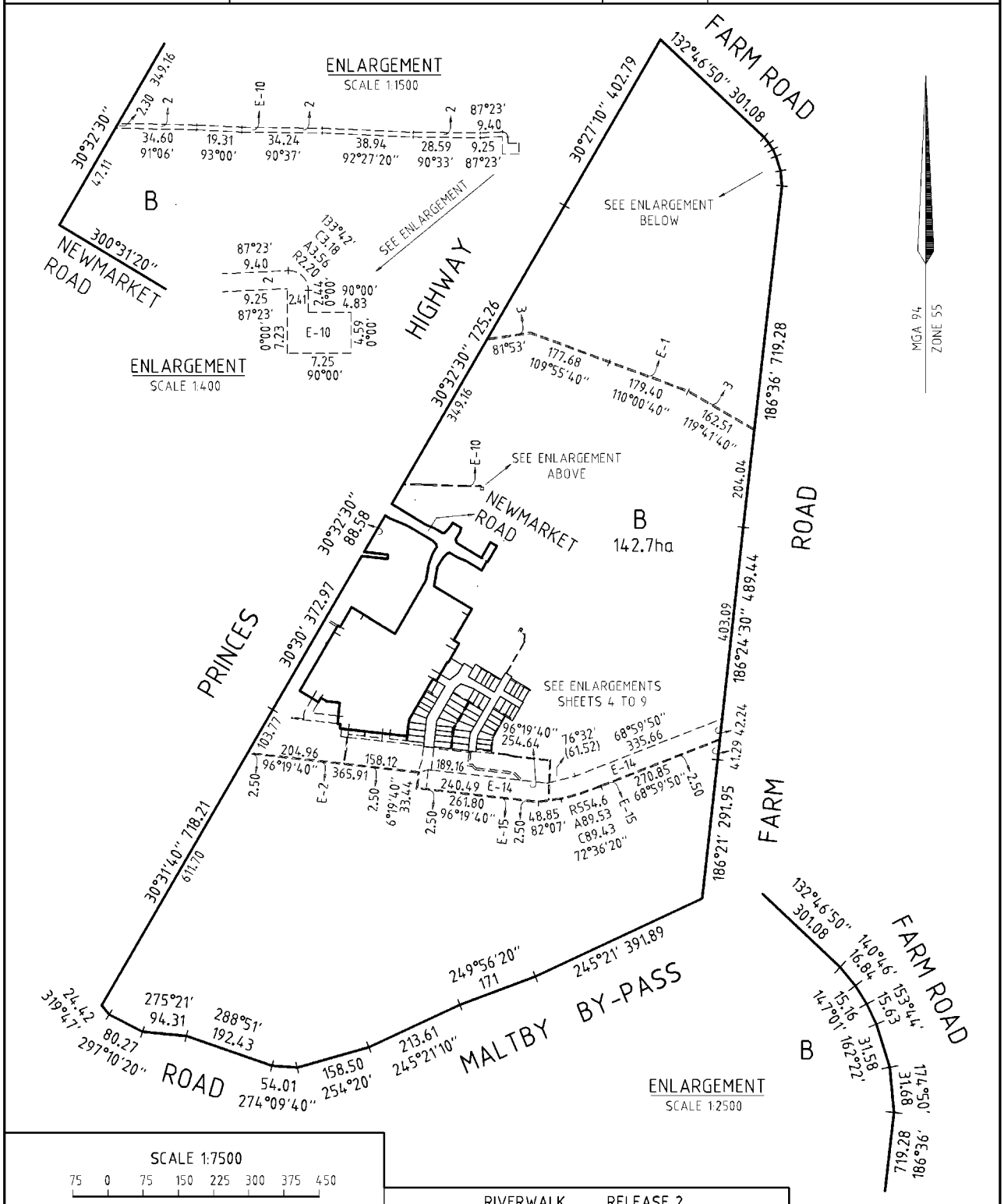
PLAN OF SUBDIVISION

STAGE NO: ——

PLAN NUMBER: PS 636839Q



SCALE 1:7500

75 0 75 150 225 300 375 450

LENGTHS ARE IN METRES

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 3

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LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

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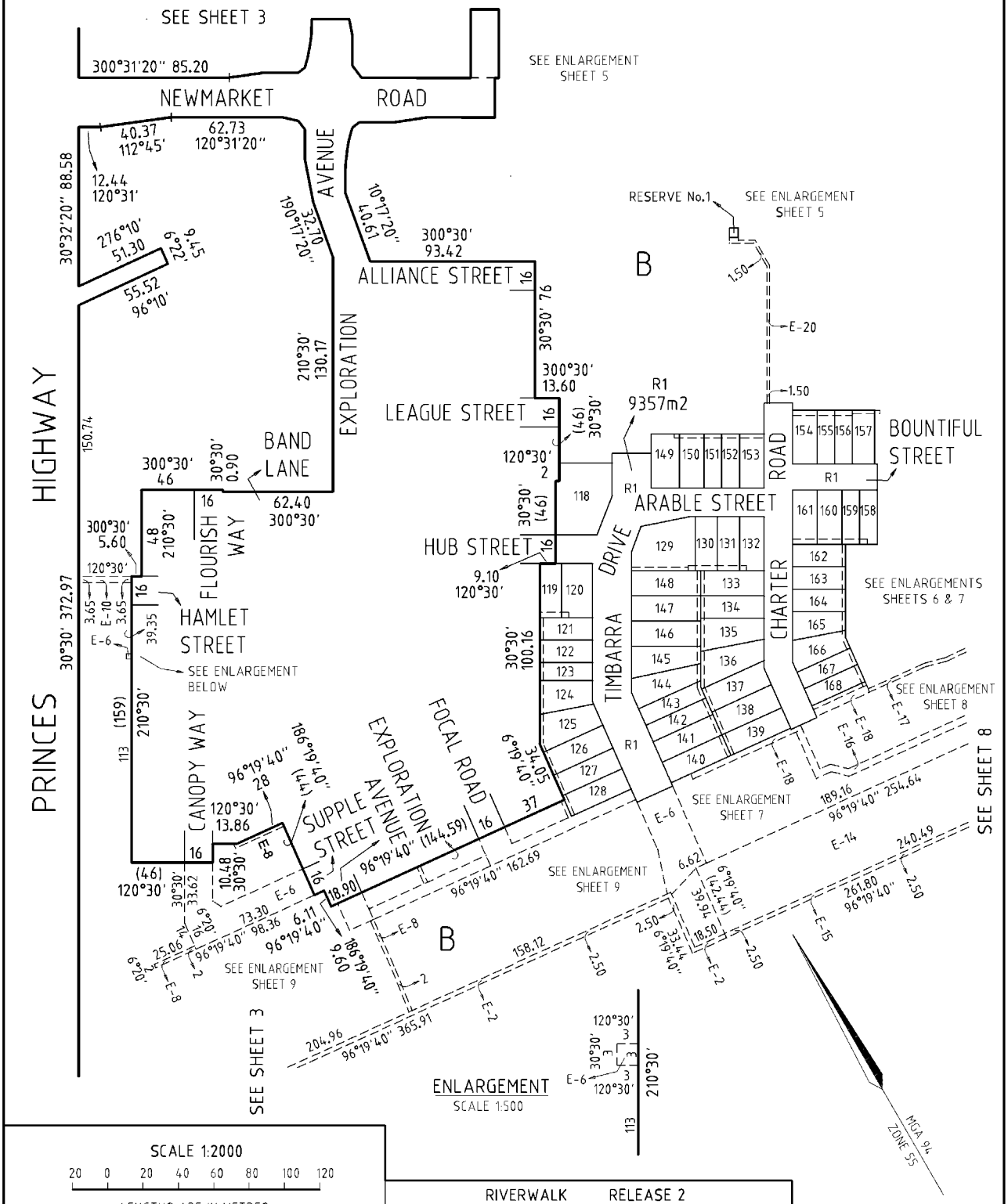
PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



SCALE 1:2000

20 0 20 40 60 80 100 120

LENGTHS ARE IN METRES

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 4

CHRIS RUNTING & ASSOCIATES PTY LTD
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LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

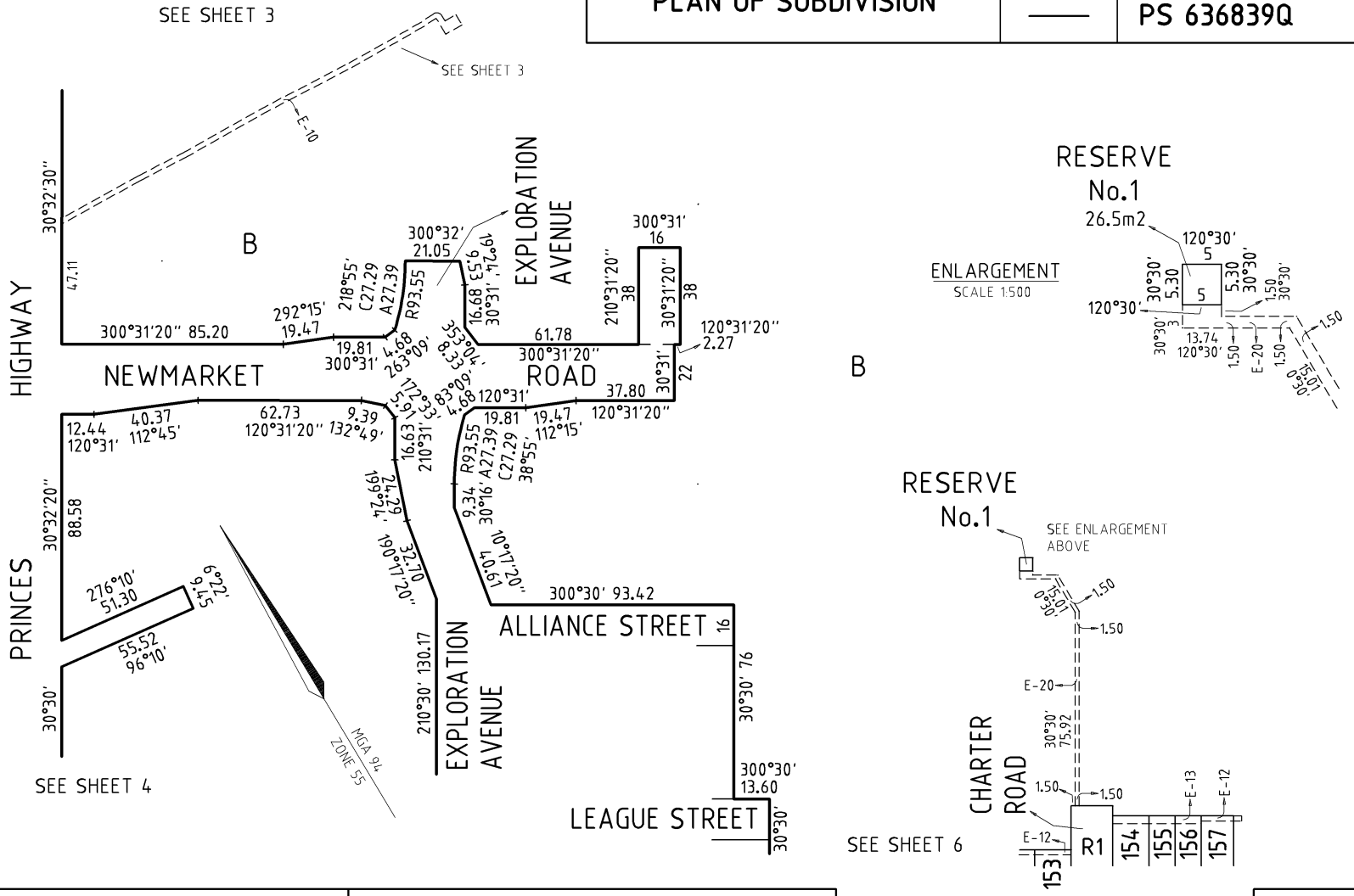
..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2	No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha	SHEET 5

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
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Tel: 9890 0933
Fax: 9898 2543

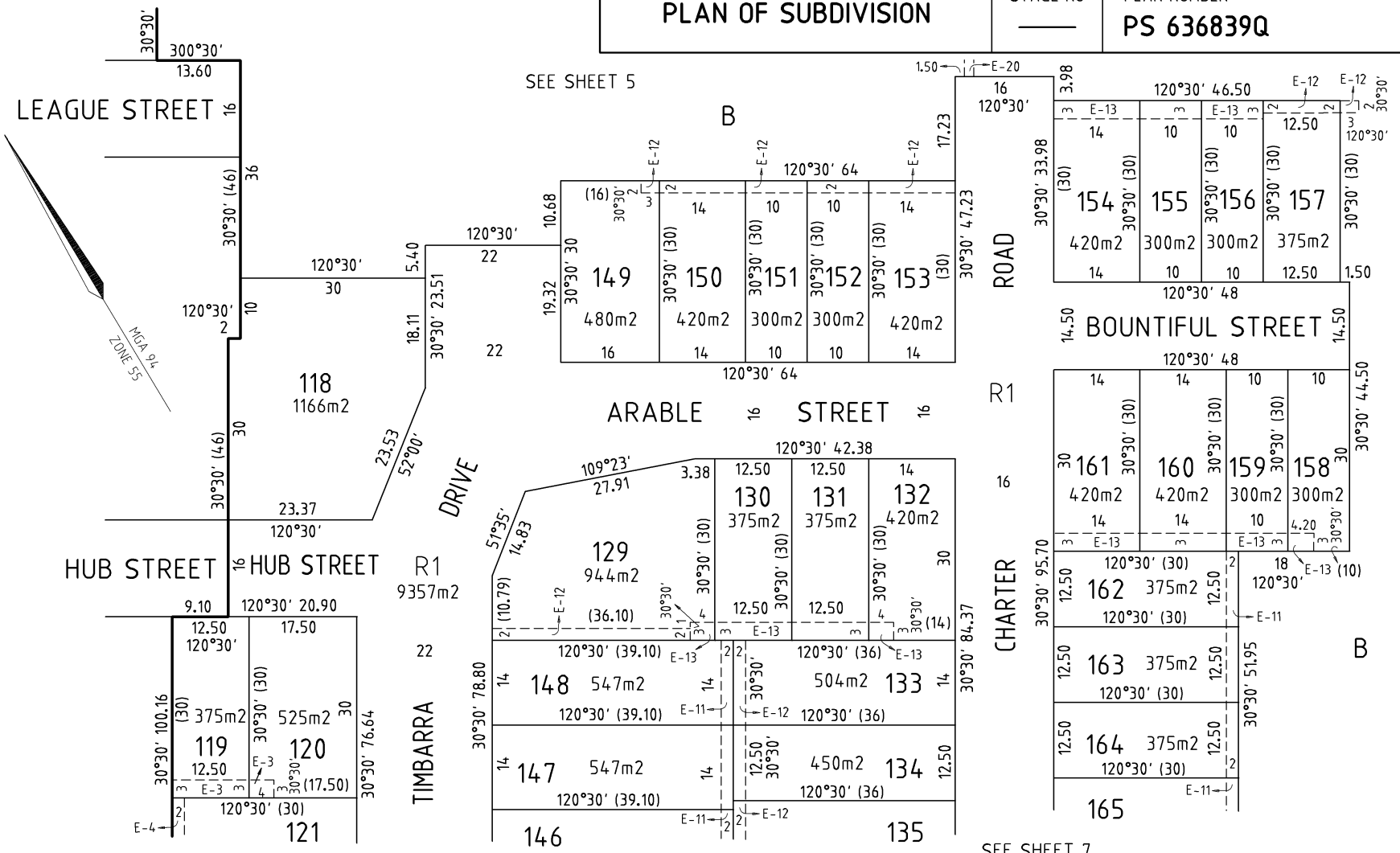
SCALE 1:1500
15 0 15 30 45 60 75 90
LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN
SIGNATURE ..... DATE / /
REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /
COUNCIL DELEGATE SIGNATURE
ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 6

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
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Tel: 9890 0933
Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

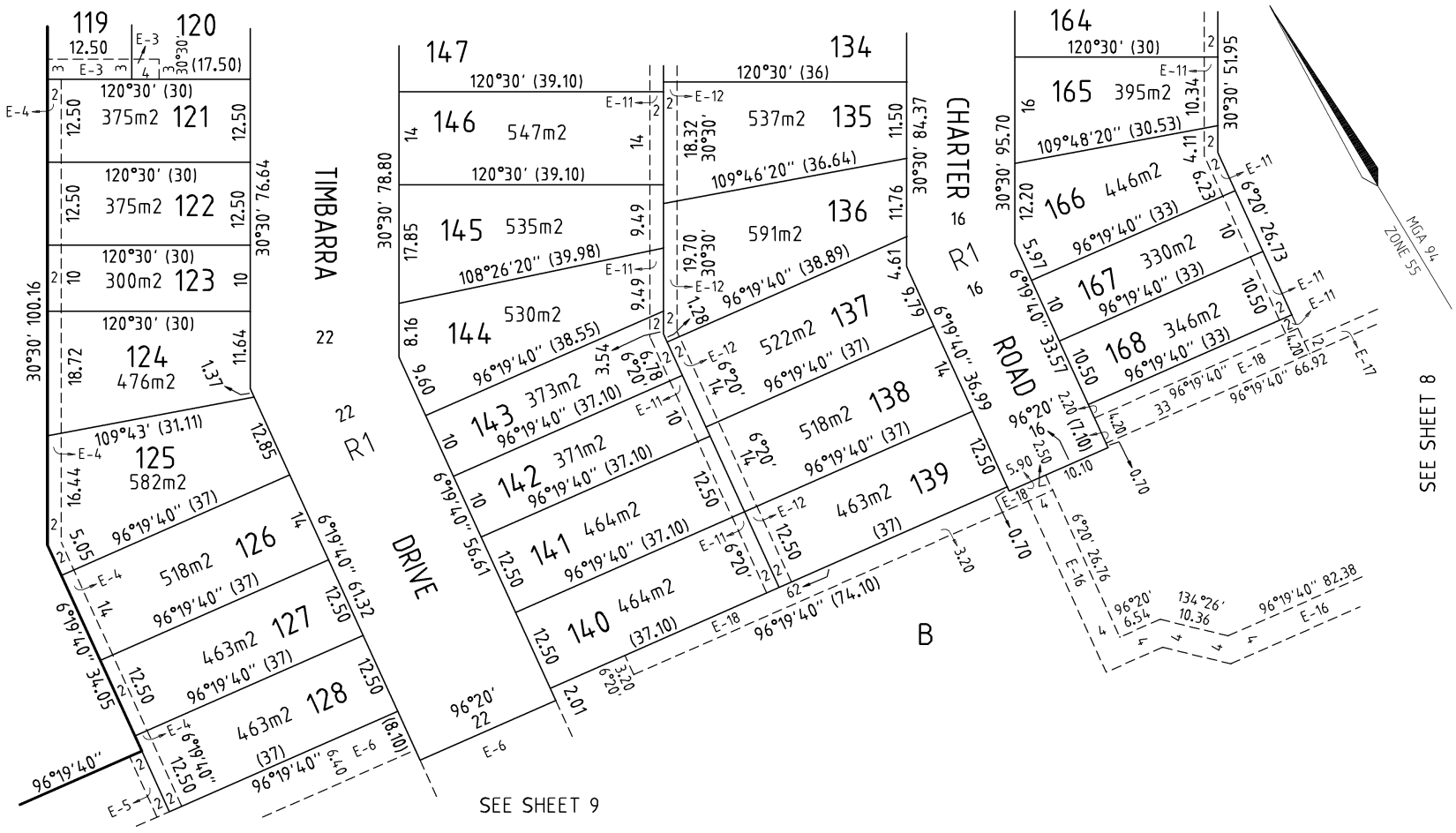
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 7

CHRIS RUNTING & ASSOCIATES PTY LTD
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TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
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Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

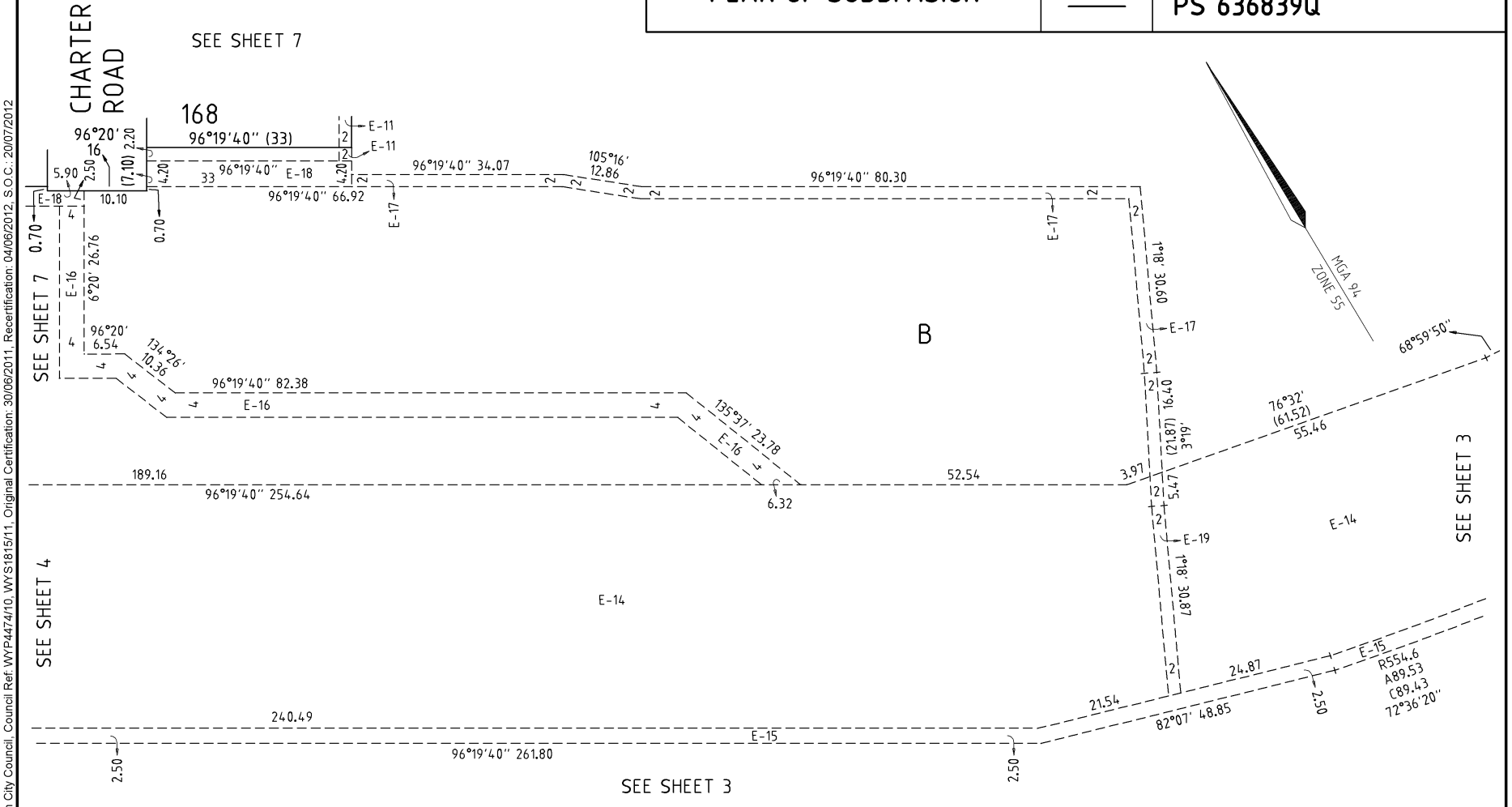
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 8

CHRIS RUNTING & ASSOCIATES PTY LTD
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TOWN PLANNERS
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Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

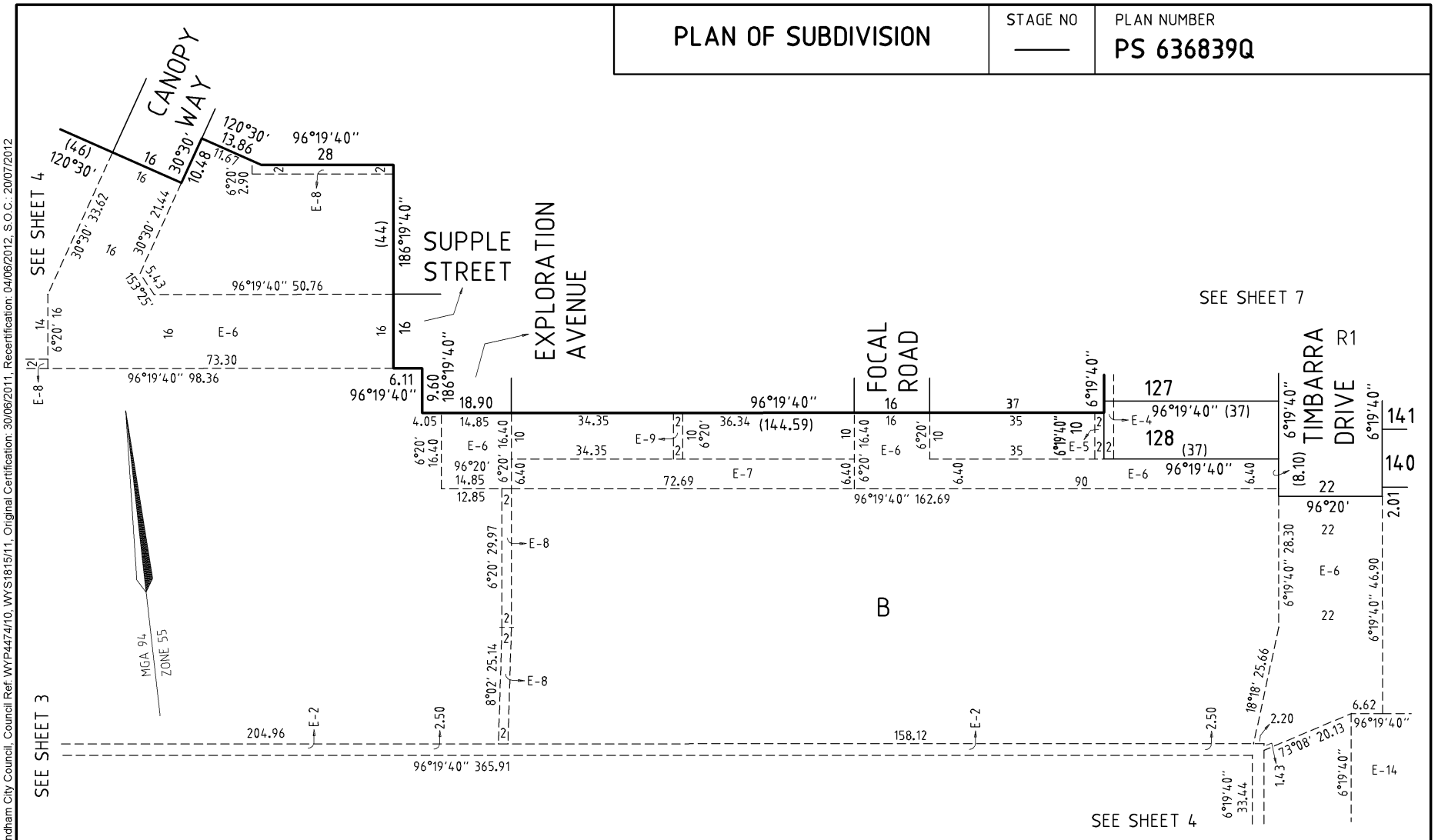
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2	No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha	SHEET 9

CHRIS RUNTING & ASSOCIATES PTY LTD
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TOWN PLANNERS
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SCALE 1:750

7.5 0 7.5 15 22.5 30 37.5 45

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

CREATION OF RESTRICTION "A"

LAND BURDENED AND LAND BENEFITED: REFER TO TABLE 1

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of any burdened lot on this plan to which this restriction applies shall not build or permit to be built or remain on the lot any building other than a building which has been constructed in accordance with endorsed memorandum of common provisions registered in dealing no AA2033 which memorandum of common provisions is incorporated into this plan.
This restriction shall cease to have affect 10 years after the date of registration of this plan.

CREATION OF RESTRICTION "B"

LAND BURDENED AND LAND BENEFITED: REFER TO TABLE 1

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of any burdened lot must not:

B1 build or erect or permit to be built or erected or remain on the burdened lot or any part of it, any building or structure other than a building or structure which has been constructed in accordance with plans, drawings, designs and specifications which have first been approved in writing by Places Victoria ABN 61 868 774 623 in accordance with Places Victoria's Riverwalk Design Requirements and Controls as amended from time to time;

B2 erect or allow any signs to remain on the burdened lot other than the following:

- B2.1 where a dwelling constructed on the burdened lot has been completed and is offered for sale (but not if the burdened lot remains vacant or the dwelling is partly completed and is offered for sale) any real estate agent's "for sale" sign not exceeding 2.4 metres x 1.8 metres; or
- B2.2 during the period of construction of a dwelling on the burdened lot signs of builders and tradespersons who are carrying out construction work on the burdened lot;

B3 use the burdened lot or any part of it as a display home except with Places Victoria's prior written consent.

Restriction B shall cease to have affect 10 years after the date of registration of this plan.

RIVERWALK RELEASE 2
No of Lots: 51 (excluding Lot B)
Release 2 Land Area: 3.248ha

SHEET 10

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
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Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN
SIGNATURE ..... DATE / /
REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /
.....
COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

CREATION OF RESTRICTION "C"

UPON REGISTRATION OF THIS PLAN OF SUBDIVISION THE FOLLOWING RESTRICTION IS CREATED

LAND BURDENED AND LAND BENEFITED:

LAND TO BE BURDENED:
Lots 118 to 168 (inclusive)

LAND TO BENEFIT:
Lot F on Plan of Subdivision number PS636838S

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of a burdened lot:

1. shall not develop a burdened lot, permit a burdened lot to be developed or permit a burdened lot to remain developed, other than in accordance with the Places Victoria Fibre To The Home Building Guidelines; and
2. must not occupy a dwelling on a burdened lot and must not obtain or procure an Occupancy Permit under the Building Act 1993 (Vic) for a dwelling on a burdened lot, prior to Places Victoria issuing a Fibre To The Home compliance certificate in respect of the dwelling on the burdened lot.

This restriction applies for the period from the date of registration of this Plan of Subdivision until the date that is 10 years after the issuing of an Occupancy Permit under the Building Act 1993 (Vic) in respect of the dwelling on the burdened lot.

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B)
Release 2 Land Area: 3.248ha

SHEET 11

CHRIS RUNTING & ASSOCIATES PTY LTD
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LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

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	PLAN OF SUBDIVISION	STAGE NO	PLAN NUMBER
		———	PS 636839Q

TABLE 1

LAND BURDENED AND LAND BENEFITED – REFER RESTRICTIONS "A" AND "B"

CREATION OF RESTRICTION

BURDENED LOT No	BENEFITING LOTS
118	120, 129, 149
119	120, 121
120	119, 121
121	119, 120, 122
122	121, 123
123	122, 124
124	123, 125
125	124, 126
126	125, 127
127	126, 128
128	127
129	130, 148
130	129, 131, 133, 148
131	130, 132, 133
132	131, 133
133	130, 131, 132, 134, 148
134	133, 135, 147
135	134, 136, 145, 146, 147
136	135, 137, 143, 144, 145
137	136, 138, 142, 143
138	137, 139, 141, 142
139	138, 140
140	139, 141
141	138, 140, 142
142	137, 138, 141, 143
143	136, 137, 142, 144

BURDENED LOT No	BENEFITING LOTS
144	136, 143, 145
145	135, 136, 144, 146
146	135, 145, 147
147	134, 135, 146, 148
148	129, 130, 133, 147
149	150
150	149, 151
151	150, 152
152	151, 153
153	152
154	155
155	154, 156
156	155, 157
157	156
158	159
159	158, 160, 162
160	159, 161, 162
161	160, 162
162	159, 160, 161, 163
163	162, 164
164	163, 165
165	164, 166
166	165, 167
167	166, 168
168	167

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B)

Release 2 Land Area: 3.248ha

SHEET 12

CHRIS RUNTING & ASSOCIATES PTY LTD

LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS

20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Plan of Subdivision PS636839Q

Certifying a New Version of an Existing Plan (Form 21)

SUBDIVISION (PROCEDURES) REGULATIONS 2000

SPEAR Reference Number: S011384A
Plan Number: PS636839Q
Responsible Authority Name: Wyndham City Council
Responsible Authority Reference Number 1: WYP4474/10
Responsible Authority Reference Number 2: WYS1815/11
Surveyor's Plan Version: 23 (4.05.12)

Certification

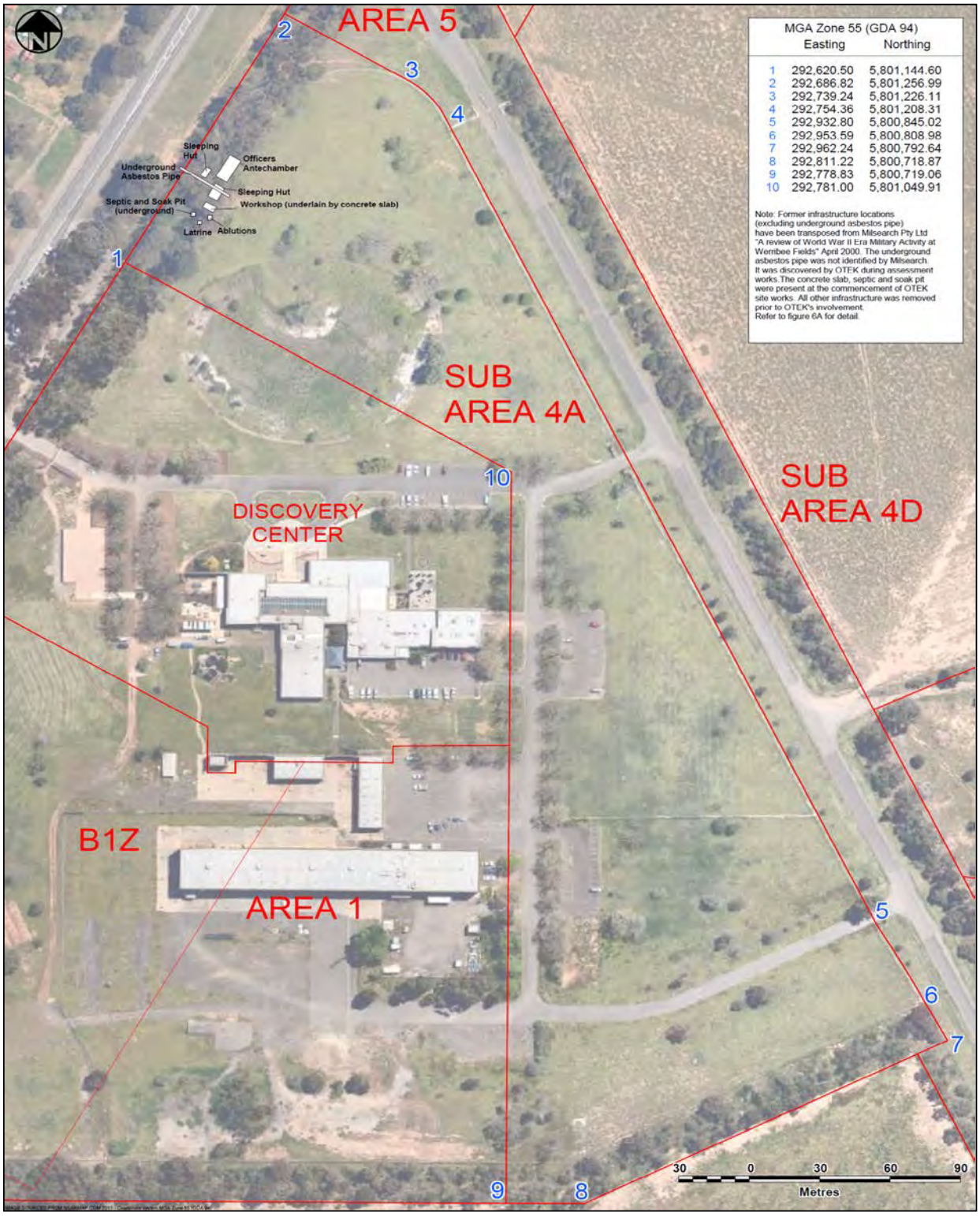
This plan is certified under section 11 (7) of the Subdivision Act 1988
Date of original certification under section 6: 30/06/2011
Date of previous recertifications under Section 11(7): 16/04/2012

Public Open Space

A requirement for public open space under section 18 of the Subdivision Act 1988

Has not been made

Digitally signed by Council Delegate:	Peter Van Til
Organisation:	Wyndham City Council
Date:	04/06/2012



Client: Melbourne Water
Project: Environmental Audit of Area 4A, Riverwalk Estate, Princes Highway, Werribee
Source: OTEK 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria*
scale: | as shown | date: | 20 February 2013

Job No. | 31/1157500
Report No. | 216943
Rev No. | A

Figure 3
Defined Audit Boundary and RAAF Infrastructure Locations

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au

Executive summary

Table 1 Summary of audit information

Summary Information Required	
EPA file reference no.	41460-3
Auditor	Dr Fouad Abo of GHD Pty Ltd
Auditor term of appointment	7 January 1997 to 26 July 2016
Name of person requesting audit	Mr Timm Kurth of Melbourne Water Corporation (Melbourne Water)
Relationship to premises / location	Property Sales Manager
Date of request	Melbourne Water first requested an audit of the Riverwalk Estate (Overall Audit Area), including Area 4A in 15 March 2000. Due to the development timing requirements, Melbourne Water decided to request a separate audit for this Area (4A). The request for the audit of Area 4A was on 8 July 2009.
Date EPA notified of audit	The Riverwalk Estate was originally to be audited as one audit, hence the auditor notified EPA as such on 15 March 2000. As explained in Section 1.1 of this report, for ease of audit and to meet the development schedule, Melbourne Water later decided to divide the site into a number of "sub"-Areas and requested and audit for each of these Areas separately. Accordingly the Auditor notified EPA, of the request to undertake an audit of Area 4A specifically on 13 July 2009.
Completion date of the audit	14 March 2013
Reason for audit	Due diligence associated with a proposed zoning change.
Current land use zoning	Residential 1 Zone (R1Z) under the Wyndham City Council Planning Scheme.
EPA region	West Metro.
Municipality	Wyndham City Council.
Dominant – Lot on plan	The site is defined as part of Lot B on Plan of Subdivision 636839Q, on Certificate of Title Volume 11367, Folio 778. The surveyed site boundary and the relevant boundary coordinates are defined on the attached Figure 3.
Additional – Lot on plan	
Site/premises name	Riverwalk Estate
• Street/Lot – Lower No.	
• Street/Lot – Upper No.	
• Street Name	Princes
• Street type (road, court, etc.)	Highway
• Street suffix (North, South etc.)	

Summary Information Required	
• Suburb	Werribee
• Postcode	3030
GIS Coordinate of Site centroid • Longitude / Northing (GDA94) • Latitude / Easting (GDA94)	Northing 5800968.43 Easting 292800.65
Site Area (hectares)	5.887 ha
Members and categories of support team utilised	None.
Outcome of the audit	Statement of Environmental Audit.
Further works or requirements	None.
Nature and extent of continuing risk	None. The contamination condition of soil and groundwater were not expected to adversely impact site uses provided.

***NB – Leave cell blank if not applicable**

Table 2 Physical site information

Summary Information Required	
Site aquifer formation	Newer Volcanics and Brighton Group Formations are located in the vicinity of the site. Wells at the site were installed within the Newer Volcanics aquifer.
Average depth to groundwater	10.5 – 13 m
Groundwater segment	Segment C
Groundwater flow direction	Groundwater flow is expected to be the east towards the Werribee River which flows approximately north-south and is located approximately 1 km to the east north east of the Overall Audit Area (at its closest point), Regionally, the flow is expected to be to the south east toward Port Phillip Bay located approximately 7 km to the south east of the site.
Past use/site history	Dairy farming, stock grazing, vegetable growing, Melbourne Water Activities and RAAF occupation.
Surrounding land use	North: Princes Highway. East: New Farm Road (Area 5, for which an Environmental Audit is currently underway). South/West: Area 2 (for which an Environmental Audit was completed in 2004). West: Melbourne Water Discovery Centre and operations building (Area 1, for which an Environmental Audit was completed in 2011), and the Princes Highway (north western boundary).
Proposed future use	The site is proposed to be used for mixed use, including retail, commercial and low density residential use.

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Appendices

1. Introduction

1.1 Background

A large portion of Melbourne Water Corporation's Farm Road site, called the Riverwalk Estate is under Environmental Audit (herein referred to as the 'Overall Audit Area'). Melbourne Water voluntarily initiated an environmental assessment (undertaken by OTEK Pty Ltd (OTEK)) and environmental audit as a due diligence measure. The Overall Audit Area is roughly triangular in shape and comprises approximately 200 hectares. The current Melbourne Water operations office and Discovery Centre will remain onsite and are not subject to an audit. The locality of the Overall Audit Area is shown on Figure 1.

In order to simplify the audit process and allow for areas with specific issues and development times to be considered separately, the Overall Audit Area was divided into the following 13 "Sub-Areas": 1, 2, 3, 4A, 4B, 4C, 4D, 4E, 4F, 4G, 4H, 4I, and 5 (herein referred to as 'Areas'). Audits for Areas 1, 2 and 3 have been completed. The remainder of the Areas were under audit at the time of reporting. Figure 2 shows the majority of the Overall Audit Area with the exception of the full extent of Area 2 and Area 3. Area 2 extends further to the south, while Area 3 is located to the east and south of Area 4C. The full extent of the Riverwalk Estate (including the full extent of the Overall Audit Area) is shown on the proposed development plan attached as Appendix D. This audit report pertains to Area 4A only, herein referred to as 'the site'. The total area of the site is 5.887 hectares. The site boundary is shown on Figure 3.

The site is part of the Riverwalk Estate which is proposed to be developed for residential purpose (with lot sizes between 300 m^2 and 600 m^2; which, in accordance with EPA (2007) defined as 'Residential – single dwelling' and 'medium-density') and associated uses such as public open space and recreation areas.

1.2 Purpose

This Environmental Audit Report sets out the results of an Environmental Audit conducted for the Site in accordance with Part IXD of the Environment Protection Act, 1970. The report was completed in accordance with the guidelines issued by the EPA for environmental audit of contaminated sites in Victoria.

1.3 Input to this report by auditor's support team

The GHD staff and support team members that assisted with this audit are provided in Table 3.

Table 3 Auditor's team assisting with audit

Name	Qualification/Role/ Experience Area	Contribution to audit
Elvira Ryan	Auditor's assistant (GHD Staff)	Assisted in the auditing process and inspected the site.
Kate Fairway	Project Manager / Auditor's assistant (GHD Staff)-	Assisted in the auditing process, assisted in preparation the draft environmental audit report and inspected the site.
Penny Flukes	Auditor's assistant (GHD Staff)	Assisted in reviewing the consultant's assessment report and the preparation of the draft environmental audit report.

1.4 Documents reviewed

The following documents were reviewed as part of the audit process:

- Sinclair Knight Merz Pty Ltd (SKM), 17 February 1993, *Report 5V3590001.rp1* (only incomplete report provided).
- Biosis Research Pty Ltd (Biosis), March 2000, *Werribee Field, Victoria: An Archaeological and Cultural Heritage Survey.*
- Milsearch Pty Ltd (Milsearch), April 2000, *A Review of World War II-ERA Military Activity at Werribee Fields.*
- Enterra Pty Ltd (Enterra), 31 May 2001, *Werribee Fields Development – Sub Surface Investigation.*

In addition, and where relevant, the auditor has referred to data pertaining to other audits being undertaken in the Overall Audit Area. Where applicable the relevant assessment reports have been referenced.

The following reports directly related to Area 4A (the site) and hence were also reviewed and relied upon as part of the audit:

- OTEK, 10 October 2002, *Phase One Report, Werribee Fields, Werribee*, Victoria, (OTEK, 2002).
- OTEK, 14 December 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Victoria,* (OTEK 2012). This report was prepared specifically for the site (i.e. Area 4A) and hence was relied upon most for the preparation of this audit report.

OTEK summarised information from the available historical reports prepared by Biosis Research, Milsearch, and Enterra in OTEK 2002. These reports are discussed in more detail in Section 2.8.1.

The report detailing the intrusive investigation works undertaken at the site since 2008 (OTEK 2012) is discussed in more detail throughout this report.

Work plans were reviewed prior to intrusive works for the various phases of investigation undertaken during the audit, and comments provided to OTEK. Additionally there was ongoing communication between the auditor and OTEK during the course of the field works.

1.5 Disclaimers

This statutory environmental audit report *Area 4A of Riverwalk Estate, Princes Highway, Werribee, Victoria* ("Report") has been prepared in accordance with Part IXD of the Environment Protection Act 1970. The Report represents the Auditor's opinion of the condition of the site in relation to the presence and impact of contamination at the site and its suitability for beneficial uses stated in the Statement of Environmental Audit at the date the Statement of Environmental Audit is signed. This Report:

1. has been prepared by Dr Fouad Abo and his team, of GHD as indicated in the appropriate sections of this Report for Melbourne Water Corporation;
2. may be used and relied on by Melbourne Water Corporation;
3. may be used by and provided to EPA for the purpose of meeting statutory obligations in accordance with the relevant sections of the Environment Protection Act 1970;
4. may be provided to other third parties but such third parties' use of or reliance on the Report is at their sole risk; and

5. may only be used for the purpose as stated in Section 1.2 of the Report (and must not be used for any other purpose).

To the maximum extent permitted by law, all implied warranties and conditions in relation to the services provided by GHD and the Report are excluded unless they are expressly stated to apply in this Report.

The services undertaken by the Auditor, his team and GHD in connection with preparing this Report were undertaken in accordance with current profession practice and by reference to relevant environmental regulatory authority and industry standards in accordance with Part IXD of the Environment Protection Act 1970.

The opinions, conclusions and any recommendations in this Report are based on assumptions made by the Auditor when undertaking the audit and preparing the Report. The assumptions are specified throughout this Report.

In undertaking the audit and preparing this Report, the Auditor is required to make judgments regarding the completeness, reliability and accuracy of the information, and the potential for contamination to impact human health and the environment. The Auditor makes these judgments based on the information available, the potential impact of contaminants based on the current scientific understanding of the significance and behavior of contaminants, the specific characteristics of the contaminants matrices and current regulatory policy and legislation. The nature of contaminated site investigations is such that there is always some uncertainty in these matters; as new information can arise, the science underlying these matters can change, and regulatory policy and legislation can change. The Auditor and his team have formed their opinion on the basis of the information available and their understanding of the current science and regulatory policy and legislation, applying processes and considerations in accordance with professional practice. It is possible that new information, a changed scientific understanding or changed regulatory policy and requirements will become available in the future that may lead to a different interpretation. The Auditor and GHD expressly disclaim responsibility for changes that arise because of any such new information, changed science or changed regulatory policy or legislation.

The Auditor and GHD have prepared this Report on the basis of information provided by Melbourne Water Corporation, assessment consultant and others who provided information to GHD (including Government authorities). The Auditor and GHD have verified the information received to the extent practicable and within the scope specified in the Guidelines for Issue of Certificates and Statements of Environmental Audit (EPA Victoria, 2007). However, there may be some information which the Auditor and GHD cannot independently verify or check ("Unverified Information").

The Auditor and GHD are not responsible for the Unverified Information, including (but not limited to) errors in, or omissions from, the Report, which were caused or contributed to by errors in, or omissions from, the Unverified Information.

This Report should be read in full and no excerpts are taken to be representative of the findings of this Report.

2. Site Characterisation

2.1 Site physical definition and description

The description and definition of the site are presented in Table 4.

Table 4 Site definition and description

Aspect	Comments	
Site Locality	The site is located in the Werribee Fields, which was proposed to be developed as part of the Riverwalk Estate development, and is located on New Farm Road, Victoria. The site locality plan (provided by OTEK) is included as Figure 1 of this report.	
Certificate of Title	The site is located on part of Lot B on Plan of Subdivision 636839Q, on Certificate of Title Volume 11367, Folio 778 (Appendix A). The site boundary was defined by the coordinates below. The defined audit area and survey coordinates are shown on Figure 3.	
GIS coordinates defining the boundary of the site (MGA Zone 55).	Easting	Northing
	262,686.62	5,801,256.99
	292,748.22	5,801,218.34
	292,962.24	5,800,792.64
	292,811.21	5,800,718.87
	292,788.82	5,800,719.06
	292,781.00	5,801,049.90
	262,620.50	5,801,144.59
Area	The site encompassed an area of approximately 5.887 ha.	
Surrounding Land Use	North: Princes Highway East: New Farm Road (Area 5 for which an Environmental Audit is currently underway) South/West: Area 2 (for which an Environmental Audit was completed in 2004). West: Melbourne Water Discovery Centre and operations building (Area 1, for which an Environmental Audit was completed in 2011), and the Princes Highway (north western boundary).	
Topography	The site and surrounding area is generally flat.	
Site Coverage / Vegetation	At the time of the audit, the site was predominantly vacant and grass covered. Two east-west and one north-south asphalt sealed roads and two car parks were present in the southern portion of the site. A portion of a man-made, drained pond was situated on the northern portion of the site. Areas of native shrubs were located proximate to the northern and southern boundaries. All vegetation at the site was noted to be healthy.	
Sampling Locations	The locations of soil and groundwater sampling undertaken by OTEK between April 2008 and October 2012 are shown on Figures 4 and 5 (soil) and Figure 8 (groundwater). The soil validation sampling locations are shown on Figure 7.	

2.2 Geology and hydrogeology

The borelogs for soil and groundwater assessment works are included in Appendices C (test pits) and G (groundwater monitoring wells) of OTEK 2012, which is included in this audit report as Appendix C.

2.2.1 Soils

The assessor indicated that the soil profile on site generally comprised:

- Grass surface underlain by brown, silty clay soil to approximately 0.1 metres below ground level (mbgl);
- Soils consisting of yellowish brown silt with occasional bands of soft, high plasticity clay to 0.5 mbgl;
- Medium to high plasticity clay soil of varying colour (yellow, red, brown) to approximately 8.0 mbgl; and
- Weathered basalt to approximately 16 mbgl (maximum depth of the investigation).

Fill material consisting of road base gravel and sand with shells was noted at less than 0.5 mbgl at six text pit locations in the vicinity of the dry pond, car park, and roadways.

OTEK described the soils at the base of the dry pond as comprising sand and gravel with shell grit at the surface, underlain by low permeability imported clay fill to approximately 0.6 mbgl, then natural silt consistent with the soil encountered on the Overall Audit Area. The section of the drained pond within the site boundary covered approximately 4160 m^2.

Boreholes and test pits were typically terminated at a maximum depth of 1.0 mbgl, with the exception of two groundwater monitoring wells which were sampled to depths of 8 mbgl and 16 mbgl.

2.2.2 Geology and aquifers

The 1:63 360 Melbourne Geological Map (Geological Survey of Victoria) indicates that the site is underlain by approximately 15 m of Quaternary Age 'Deutgam Silt' alluvial deposits of the Werribee Delta, comprising grey to grey-brown silt with abundant carbonate nodules and some gravel, and sand and silty sand in the lower part of the sequence. The Deutgam Silt (of the Werribee Delta Formation) overlies approximately 40 m of Quaternary Age Newer Volcanic Formation, which predominantly comprises dark to light grey olivine basalt. The Newer Volcanic is underlain by the Brighton Group Formation and the Newport Formation. Regional data indicate that the Werribee Delta alluvial deposits may also directly overlie Brighton Group sands in places.

Groundwater is likely to be present within the alluvium deposits and the basalt fractures within the Newer Volcanic Formation.

2.2.3 Groundwater flow system

The Newer Volcanic and Brighton Group Formations are the two primary aquifer systems in the vicinity of the site. Groundwater flow was expected to be towards the Werribee River, which is the nearest receiving surface water body. The Werribee River flows from approximately north to south and is located approximately 1 km to the east north east of the Overall Audit Area (at its closest point). Regionally, groundwater is expected to flow in a south-easterly direction toward Port Phillip Bay, which is located about 7 km to the south east of the site.

The Werribee Delta is an unconfined to semi-confined shoe-string aquifer located near the mouth of the Werribee River, where it discharges to Port Phillip Bay. The Deutgam Silt is not

expected to constitute a significant aquifer system in the vicinity of the site. Well yields in the Werribee Delta Aquifer range up to 15 litres per second (L/s) but are generally less than 5 L/s. Groundwater quality ranges from 500 to 6000 mg/L total dissolved solids (TDS), with the lower TDS occurring within the coarser lenses.

The Newer Volcanics Formation comprises fractured basalt with interbedded clay aquitards. The shallow parts of the aquifer are unconfined, while the deeper parts range from semi-confined to confined. Water occurs in fractures and vesicular voids. Hydraulic properties vary widely depending on the condition of the basalt. Well yields in the Newer Volcanics Aquifer range up to 40 L/s but are generally less than 1.2 L/s. Groundwater quality in this aquifer ranges from 100 to 6000 mg/L TDS with the chemistry largely dependent on the state of weathering of the surrounding basalt. This aquifer, along with the underlying Brighton Formation aquifer, is identified as a primary aquifer in the region.

Groundwater monitoring well logs for the site (refer to Appendix G of OTEK 2012, attached as Appendix C of this report) indicate that wells were installed within the Newer Volcanics aquifer.

2.2.4 Groundwater database and groundwater quality

Groundwater database

OTEK did not undertake a search of the Victorian Groundwater Management System (managed by DSE), therefore the auditor undertook a search and review. The search identified 19 wells within a 1 km radius of the site, as tabulated and shown on a plan in Appendix F (note several of the wells are plotted in the same location due to the scale of the plan). The well locations shown in Appendix F are approximate only. The information available was considered sufficient to determine the approximate location of wells relative to the site, and hence was adequate for the purposes of the audit. The wells were listed as being used for domestic, stock and investigation purposes, with the use of several wells listed as not known. No groundwater chemistry data were available. The majority of groundwater wells were located cross or up gradient of the site and were considered unlikely to be in the flow path of groundwater from the site.

One well was identified on the site, which was not installed by OTEK and was not used for the audit purpose (refer Section 4.3). It was understood this well was installed by another consultant for the purpose of monitoring groundwater levels across the Western Treatment Plant, with a water level assessment undertaken by Golder in 2008 (Golder 2008). No chemical data were available from this well, and construction details were not known.

Groundwater quality

Based on groundwater data from the Overall Audit Area including this site, information from nearby audits and published references, and as discussed further in Section 6.2 of this report, groundwater in the region was found to have elevated concentrations of some inorganics and nitrate, this was considered to be attributed to naturally occurring concentrations in the Newer Volcanics Aquifer, and to widespread regional agricultural land use.

2.3 Surface water

The Werribee River is located approximately 1 km to the east north east of the Overall Audit Area (at its closest point), and flows in a southerly direction towards Port Phillip Bay, located about 7 km south of the site.

A portion of a dry, man-made pond was located on the site; however, this was drained by Melbourne Water in 2008/2009. No other surface water bodies were located on the site.

2.4 Site physical status at audit commencement and completion

The site was historically used by the RAAF for officers' accommodation and workshop. Residual infrastructure from this time that remained on the site at the commencement of the audit and the status at audit completion is summarised in Table 5.

Table 5 On-site infrastructure and status

Infrastructure	Status [1]
Septic and soak pit (septic tank was removed prior to audit commencement)	Removed in 2009
Concrete slab (formerly associated with workshop which was removed prior to audit commencement)	Removed in 2009
Water bearing asbestos pipeline (underground)	Removed in 2010
Roadways / car parks	One north-south and two east-west roadways, and two car parks remain.
Pond/lake (dry)	Retained on site

NOTES

[1] From OTEK 2012 and auditor inspections.

A plan of the former site infrastructure is provided in Figure 3. At the time of audit completion, no infrastructure; aside from the roadway, car park, and dry pond was present on site.

Further discussion regarding the investigation activities undertaken during the infrastructure removal is provided in Section 5.3 of this report.

2.5 Proposed site development

The site was part of the Riverwalk Estate which was proposed to be developed for residential development (with lot sizes between 300 m^2 and 600 m^2) and associated uses such as public open space and recreation areas.

As per the development plan and in accordance with EPA (2007) the lot sizes would be defined as 'residential – single dwelling' (300 m^2 to 4000 m^2) and 'medium-density' (one dwelling between 200 m^2 and 300 m^2).

The proposed development plans and planning scheme information are included in Appendix D of this report.

2.6 Review of EPA Notices, Register, Licences and/or Trade Waste Agreements

There were no EPA licences or trade waste agreements relevant to Area 4A.

The auditor's file search indicated that Area 4A was not subject to overlays related to contaminated land, was not on the EPA Priority Sites register, and was not subject to an EPA clean-up or pollution abatement notice. Melbourne Water initiated this audit and environmental assessment as part of its own due diligence measures.

2.7 Off-site investigations

At the time of the audit, investigations on the areas of the Overall Audit Area surrounding the site were being undertaken. Some of the assessment information from the surrounding sites was used in this audit due to a number of similarities (e.g. history, geology, hydrogeology, etc.).

Such information hence provided further confidence in the auditor's understanding of the background conditions (where appropriate).

2.8 Site and surrounding site history

2.8.1 Summary of historical reports for the overall audit area

Various historical reports were reviewed to provide information on the site history and potential contaminants of concern. Information from the historical reports undertaken between 1993 and 2001 was detailed in OTEK (2002), included as Appendix B of this audit report. The following historical reports were considered. The first two were not relied upon for the purposes of the audit as they were out-dated and were superseded by more recent site history report, geophysical report, and detailed assessments, as discussed in this report.

SKM Pty Ltd (1993)

SKM (1993) conducted a preliminary site investigation for the Overall Audit Site prior to the commencement of the Environmental Audit. A total of 52 samples were collected from 26 locations across the Audit Site. No samples were collected from the site (Area 4A).

Biosis Pty Ltd (March, 2000)

Biosis conducted an archaeological and cultural survey to identify any areas of archaeological and cultural heritage that may be impacted by the proposed site investigation and development across the Overall Audit Site. The survey included research of background information relating to the Overall Audit Area, site inspections, and a systematic ground survey. Liaison was also made with the Wathaurong Aboriginal Cooperative Ltd and the South West Region Cultural Heritage Group. The report has not identified any heritage or cultural issue at the site. The Biosis report is attached as Appendix C of OTEK 2002 (attached as Appendix B of this report).

Milsearch Pty Ltd (April, 2000)

Milsearch undertook a review of the site history during the World War II era to determine the potential for the presence of residual munitions and other material burials or contaminants at the site.

The report did not identify any potential contamination resulting from the occupation of the site by the Royal Australian Air Force (RAAF) during 1942 to 1952. However, the investigation did identify the potential existence of a UST in the vicinity of the north western boundary of the site, inferred to be within audit Area 5. OTEK undertook extensive investigations in the Area identified by Milsearch, but did not find any evidence of a UST (discussed further in Section 2.9). The Milsearch report is attached as Appendix B of OTEK 2002 (attached as Appendix B of this report).

Enterra Pty Ltd (May, 2001)

In response to the findings of the Milsearch report, a subsurface geophysical investigation was conducted by Enterra between November 2000 and February 2001 to locate any unexploded ordnance (UXO), buried wastes or other underground facilities. The investigation was undertaken using various geophysical techniques including the use of a digital magnetometer and electromagnetic detection equipment. The survey did not identify any UXO or potential burial sites within the site. The Enterra report is attached as Appendix D of OTEK 2002 (attached as Appendix B of this report).

2.8.2 Summary of available site history information

OTEK undertook a history review for the Overall Audit Area (OTEK 2002), including a review of the historical reports by SKM (1993), Geo-Eng (1997), Biosis (2000), and Milsearch (2000), review of Melbourne Water historical property files, Sands and McDougall records and historical title records, personnel interviews, and an aerial photograph search (site photographs were not available prior to 1945). OTEK also provided a summary of the site history findings relevant to the site in OTEK 2012.

- The Overall Audit Area and land in the general vicinity was used for dairy farming, stock grazing, and vegetable growing during 1880-1900.
- According to Biosis (2000), circa 1900, the Board of Works ceased leasing the land (approximately 10,000 hectares) and used it for waste water irrigation in winter and sheep grazing in summer. Further information indicated that wastewater irrigation practices were undertaken on a small portion of off-the Overall Audit Area land located beyond the south west of Area 2 (Environmental Audit was completed for Area 2 in 2004). This was practice until 1958, when the Maltby Bypass was constructed adjacent to the southern boundary of the overall audit site. The Caltex Service Station and the Freeway Access Ramp now occupy this area, which is not part of the Overall Audit Area. The available information indicated that the Overall Audit Site has not been irrigated using wastewater.
- Melbourne Water Corporation acquired the Overall Audit Area in 1927.
- The Overall Audit Area was occupied by the RAAF from circa 1940 to 1952.
- From the early 1950s to the late 1970s the site was used primarily for agriculture, and then in the late 1970s Melbourne Water began operating at the site.
- OTEK (in OTEK 2012) indicated that known RAAF infrastructure on Area 4A included a latrine, ablutions, carpenters workshop, officers antechamber, two sleeping huts, and underground terracotta piping, the majority of which was removed in 1952. The location of former infrastructure is shown on Figure 3.
- As per OTEK 2012, in the late 1970s Melbourne Water began operating at the site and by 1979 the man-made pond; developed as part of the landscaping of the Melbourne Water site office development and some of the roads and car parks were built. In 2008/09, the man-made pond was drained by Melbourne Water due to water restrictions.
- Other than the draining of the pond, there have been no significant changes in use since the late 1970s. The drained pond was present near the northwest corner of the site (see Figure 3), and the Area 4A/4I boundary bisects the pond. The entire pond was approximately 7260 m^2, with approximately 4160 m^2 of this within Area 4A. The investigation of the pond is discussed in Section 5.1.2 below.
- OTEK identified four USTs (two diesel and two unleaded petrol) to the immediate west of Area 4A (within Area 1) which were in use in 2002. Further discussion regarding the USTs is provided in Section 2.9.
- Previous investigations reported anecdotal information that a UST may possibly have been located along the western boundary of the Overall Audit Area during use of the site as a RAAF base. Based on all available information and a search conducted by OTEK, it was considered (if it indeed existed at all) to have been located within Area 5, which was to the north east of the site. In an attempt to verify the anecdotal information regarding the potential presence of a UST, OTEK undertook extensive trenching works in the area. No evidence was found to confirm the anecdotal information on the presence of the UST (OTEK 2012). The investigations undertaken are discussed further in Sections 2.9 and 5.1.2.

2.9 Identified contaminants of potential concern

OTEK provided information on the contaminants of potential concern (CoPC) in Section 5 of OTEK, which was based on the site infrastructure and historical site use. A summary of the previous site uses and the associated CoPC identified are summarised in Table 6, along with specific observations related to each potential source.

Table 6 Potential sources and associated contaminants of potential concern

Site activity / Potential Source	Contaminants of Potential Concern (CoPC)	Location	Comments
On site			
RAAF infrastructure: • septic tank and soak pit • latrine. • ablutions. • workshop (concrete slab remained at time of audit. • underground asbestos pipe (water bearing.	Inorganics, organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), total petroleum hydrocarbons (TPHs), polycyclic aromatic hydrocarbons (PAHs), phenols, semi volatile organic compounds (SVOCs), cyanide, fluoride, ammonia, nitrate, asbestos, e.coli, and pH.	North western portion of site. Refer Figure 3.	Infrastructure above and belowground. Status at time of audit: • Septic/soak pit: boulders and cobbles remaining in pit at commencement of audit, removed and underlying soils validated during audit. • Latrine and ablutions: buildings removed prior to audit. • Workshop: building removed prior to audit, concrete slab remained at commencement of audit, removed and underlying soils validated during audit. • Asbestos pipe: removed during audit.
Agriculture, farming, grazing, general.	Inorganics, OCPs/OPPs, herbicides, asbestos, pH, nitrate, nitrite, and ammonia.	Entire site.	A potential for broad application of pesticides across the site and Overall Audit Area. A potential for scattered debris and non-friable asbestos fragments in some parts of the Overall Audit Area. However, the auditor noted that OTEK's investigation did not identify any surface debris or asbestos fragments at the site, and asbestos was not detected in any samples analysed.
Off site			
Agriculture, farming, grazing, general.	Inorganics, nitrate, nitrite, ammonia, OCPs/OPPs, and herbicides, and asbestos.	Overall Audit Area.	Concentrations of CoPCs across the adjacent audit Areas (Area 1, 2, and 5) were low. As noted above, there was a potential for scattered debris and non-friable asbestos fragments across the Overall Audit Area however, the auditor noted that OTEK did not identify any surface debris or asbestos fragments at the site, and asbestos was not detected in any samples analysed.

Site activity / Potential Source	Contaminants of Potential Concern (CoPC)	Location	Comments
Fuel storage	Inorganics, TPHs, benzene, toluene, ethylbenzene, xylenes (BTEX), PAHs, phenols, and SVOCs.	Confirmed Area 1 UST	In 2009 OTEK supervised the removal of four USTs (two diesel and two petrol, and associated bowsers, lines, and infrastructure) in Area 1, located proximate to the western boundary of the site, and validated the underlying soils. No hydrocarbon contamination was identified and no remedial works were required (summarised in Section 5.4.2 of OTEK 2012, and reported under separate cover *Riverwalk Area 1 – UPSS Removal & Validation*, 2009). A groundwater investigation undertaken in Area 4A, targeting the former UST in Area 1 (discussed further in Section 6), did not identify any hydrocarbon impacts in soil or groundwater.
		Suspected Area 5 UST	OTEK undertook an extensive investigation for the UST that previous reports inferred was located to the north east of Area 4A (within Area 5). No UST or any evidence of a former UST was identified. A summary of the UST investigation was provided in Section 5.4.2 of OTEK 2012, and details reported under separate cover (*DRAFT Environmental Site Assessment, Riverwalk Area 5*, 2012). A groundwater monitoring well (MW7) was installed to assess potential impacts to soil and groundwater in the vicinity (on the assumption the UST was present historically), discussed further in Section 6.
RAAF infrastructure in Sub Areas 4B and 4H (hangars and septic tanks)	Asbestos, inorganics, fluoride, E.coli, ammonia, nitrate, asbestos, and pH.	Potential for broad contamination from runoff from Areas east (Area 4B) and north east (4H) of the site.	A hydrogeological assessment of the Overall Audit Area found that Areas 4B and 4H were down-hydraulic gradient of the site, and hence the potential for contamination to migrate from these Areas via groundwater to the site was low. OTEK did not comment on the possibility of windborne contamination or surface runoff. However, given the substantial buffer provided by Area 5 between the site and Areas 4B and 4H, the likelihood of cross contamination through dust migration and/or surface runoff is considered to be insignificant.

Site activity / Potential Source	Contaminants of Potential Concern (CoPC)	Location	Comments
Area 2	Arsenic	Marginally elevated arsenic concentrations (above EIL) detected in shallow soils across Area 2.	Marginally elevated arsenic concentrations were identified in shallow soils in Area 2 (located to the south of the site) during the assessment work for the audit completed in 2002. OTEK did not identify any specific source of arsenic within Area 2, and arsenic was not detected in groundwater. Therefore, OTEK concluded these concentrations to be consistent with background levels and therefore not a concern. The auditor agreed with this conclusion and did not consider soil in Area 2 to be a potential source of arsenic contamination to the site.

Auditor's opinion on site history assessment

When the site history information from various sources was reviewed in its entirety, it provided a comprehensive understanding of potentially contaminating activities that may have occurred at the site. Based on the site history review, the majority of the site was considered likely to be green field land, with a low potential for contamination. The former RAAF infrastructure and site uses were considered unlikely to have generated significant impacts to soil and groundwater, though the status of the soils at the base of the dry pond were not known and were hence assessed in accordance.

The auditor was satisfied that the site history review of the site and Overall Audit Area provided sufficient information to allow an appropriate sampling and analysis program to be developed and then implemented as discussed in this report.

3. Assessment Guidelines

Environmental protection in Victoria is legislated under the *Environment Protection Act 1970* (EP Act). Sub-ordinate legislation within the EP Act includes State environment protection policies (SEPPs) that prescribe beneficial uses and objectives that are to be met to protect the various segments of the environment.

3.1 Beneficial uses of the land to be protected

For the land segment, the *State environment protection policy (Prevention and Management of Contamination of Land)*, 2002 applies. Commonly referred to as the 'Land SEPP', the policy provides the beneficial uses to be protected under a number of different land use scenarios, and provides indicators and objectives for protection of land.

The land use categories of possible relevance to any site according to the Land SEPP are:

- Parks and Reserves;
- Agricultural;
- Sensitive Use including child care centre, pre-school, primary school and residential, any of which may take place in:
  - A high density area (where there is minimal access to soil) - Sensitive Use (High Density).
  - A lower density area (where there is generally substantial access to soil) - Sensitive Use (Other).
- Recreation/Open Space;
- Commercial; and
- Industrial.

The Policy defines protected beneficial uses for land as being:

- Maintenance of natural ecosystems, modified ecosystems and highly modified ecosystems;
- Human health;
- Buildings and structures;
- Aesthetics; and
- Production of food, flora and fibre.

The protected beneficial uses for each of the respective land uses are shown in Table 1 of the Land SEPP. This table is reproduced in Table 7 below.

Table 7 Protected beneficial uses of land

Beneficial Use	Land Use						
	Parks & Reserves	Agricultural	Sensitive Use (High Density)	Sensitive Use (Other)	Recreation / Open space	Commercial	Industrial
Maintenance of Ecosystems							
Natural Ecosystems	✓						
Modified Ecosystems	✓	✓		✓	✓		
Highly Modified Ecosystems		✓	✓	✓	✓	✓	✓
Human Health	✓	✓	✓	✓	✓	✓	✓
Buildings & Structures	✓	✓	✓	✓	✓	✓	✓
Aesthetics	✓		✓	✓	✓	✓	
Production of Food, Flora & Fibre	✓	✓		✓			

The site is proposed to be developed for residential uses including residential-single dwelling and medium-density residential use and as such the beneficial uses under the sensitive use (other) land use category apply as per the Land SEPP. The relevant beneficial uses of land to be protected under the sensitive use (other) category are:

- Modified Ecosystems;
- Highly Modified Ecosystem;
- Human Health;
- Buildings & Structures;
- Aesthetics; and
- Production of Food, Flora and Fibre.

3.2 Adopted investigation levels – land

The Land SEPP refers to the National Environment Protection (Assessment of Site Contamination) Measure in December 1999 (often referred to as “the NEPM”) which was formulated by the National Environment Protection Council (NEPC), under the *National Environment Protection Council Act 1994.* All the States and Territories of Australia were signatories to the making of the NEPM, including Victoria under the *National Environment Protection Council (Victoria) Act 1995.*

The NEPM provides investigation levels for soil and groundwater in the assessment of site contamination including Ecological Investigation Levels (EILs) and Health Investigation Levels (HILs) in Schedule B(1). The NEPM EILs and HILs are referred to in the Land SEPP as the principal objectives to be met to protect the beneficial uses of land.

3.2.1 Ecological protection

NEPM EILs (Interim Urban) (NEPC, 1999) were adopted as the initial screening level to assess potential impacts of soil contaminants on the environment (i.e. to consider impacts to the beneficial use 'Maintenance of Ecosystems'). EILs are set for urban land use (comprising city, suburban, and industrial areas). Where no EIL exists for an analyte, the following hierarchy of criteria were used by the auditor to assess potential ecological impact:

- Threshold concentrations for sensitive land use - soils (Table 3) from the NSW EPA (1994) *Guidelines for Assessment of Service Station Sites*;
- The Environmental Investigation "B" levels presented in the ANZECC & NHMRC (1992) *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*; and
- The Dutch Target and Intervention Values provided in MHSPE (2009).

Where composite sampling occurred during the initial investigations at this site, modified investigation levels were adopted for these samples (i.e. ecological investigation criteria were divided by the number of a samples making up the composite sample).

3.2.2 Human health protection

NEPM HIL A criteria were adopted as the initial screening level to assess impacts of soil contaminants on human health at the site. NEPM HIL A criteria are applicable for protection of human health in standard residential land uses with gardens / accessible soil (home grown produce contributing less than 10% fruit and vegetable intake; no poultry) and includes children's day care centres, preschools, and primary schools.

Where concentrations were below NEPM HIL A, it was generally considered that contamination would not adversely affect human health under any of the exposure scenarios (NEPM 1999). Where contaminant concentrations exceeded NEPM HIL A, results were then compared to HIL D to F to determine the land use scenarios under which human health would be protected. Such evaluation would typically include the nature and degree of the exceedance and a consideration of any proposed site use, human health risks or other impacts on the nominated beneficial use.

Where no HIL exists for an analyte, the following hierarchy of criteria were used by the auditor to assess potential human health impact.

- Threshold concentrations for sensitive land use - soils (Table 3) from the NSW EPA (1994) *Guidelines for Assessment of Service Station Sites*;
- The Environmental Investigation "B" levels presented in the ANZECC & NHMRC (1992) *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*; and
- The Dutch Target and Intervention Values provided in MHSPE (2009).

Where composite sampling occurred during the initial investigations at this site, modified investigation levels were adopted for these samples (i.e. human health criteria were divided by the number of a samples making up the composite sample).

3.2.3 Aesthetics

There are no published criteria specific to assessment of aesthetic impact. However, the Land SEPP includes the aesthetic as a protected beneficial use of the land and also states (Table 2 of the SEPP) "contamination must not cause the land to be offensive to the senses of human beings". The NEPM (1999) also specifies the fundamental principle that the soils should not be discoloured, malodorous (including when dug over or wet) nor be of abnormal consistency.

3.2.4 Buildings and structures

The Land SEPP requires that "Contamination must not cause the land to be corrosive to or adversely affect the integrity of structures or building materials". The Land SEPP specifies pH, sulfate, redox potential, salinity or any chemical substances or waste that may have a detrimental impact on the structural integrity of buildings and/or other structures as indicators.

3.2.5 Production of food, flora and fibre

The Land SEPP requires that "Contamination of land must not:

(i) adversely affect produce quality or yield; and

(ii) affect the level of any indicator in food, flora and fibre produced at the site (or that may be produced) such that the level of that indicator is greater than that specified by the *Australia New Zealand Food Authority, Food Standards Code*".

The SEPP specifies any chemical substance or waste including those in the National Environmental Protection (Assessment of Site Contamination) Measure, Schedule B(2), Appendix 1.

In the absence of officially adopted investigation levels specifically for protection of food, flora and fibre, NEPM EILs have been considered for the purpose of this audit. It is noted that OTEK adopted NEPM A HILs as investigation levels for this beneficial use. The auditor considered the EILs should also be considered as they are, in relative terms more appropriate for determining potential adversity to produce quality or yield.

3.3 Beneficial uses of groundwater to be protected

The Victorian Environment Protection Authority (the Authority) will determine the segment to which groundwater in an aquifer belongs. The beneficial uses to be protected for each of the groundwater segments are defined in Table 2 of the *State environment protection policy Groundwaters of Victoria 1997*, herein referred to as the Groundwater SEPP. Water of higher quality (lower salinity) has more beneficial uses than low quality (more saline) groundwater.

The protected beneficial uses for each segment are shown in Table 2 of the Groundwater SEPP. This table is reproduced in Table 8 below.

Table 8 Protected beneficial uses of groundwater segments

Beneficial Uses	Segments (mg/L TDS)				
	A1 (0-500)	A2 (501-1000)	B (1001-3500)	C (3501-13,000)	D (greater than 13,000)
Maintenance of ecosystems	✓	✓	✓	✓	✓
Potable water supply					
Desirable	✓				
Acceptable		✓			
Potable mineral water supply	✓	✓	✓		
Agriculture, parks & gardens	✓	✓	✓		
Stock watering	✓	✓	✓	✓	
Industrial water use	✓	✓	✓	✓	✓
Primary contact recreation (e.g. Bathing, swimming)	✓	✓	✓	✓	

Beneficial Uses	Segments (mg/L TDS)				
	A1 (0-500)	A2 (501-1000)	B (1001-3500)	C (3501-13,000)	D (greater than 13,000)
Buildings and structures	✓	✓	✓	✓	✓

As per clause 9(2) of the SEPP, the Authority may also determine that a beneficial use specified in Table 8 above does not apply to groundwater where:

- there is insufficient aquifer yield to sustain the beneficial use;
- the background level of a water quality indicator other than TDS precludes a beneficial use;
- the soil characteristics preclude a beneficial use; or
- a groundwater quality restricted use zone has been declared.

Clause 5. (1) of the Groundwater SEPP also states that "The goal of the policy is to maintain and where necessary improve groundwater quality sufficient to protect existing and potential beneficial uses of groundwaters throughout Victoria."

EPAV (2007) *Publication 759.1, Environmental Auditor (Contaminated Land) Guidelines for Issue of Certificates and Statement of Environmental Audit* provides further explanation:

- Section 9.3 (last paragraph, Explanatory Note) states: "Any assessment of the likelihood of particular beneficial uses of groundwater being realised should be based on an evaluation of whether a owner/occupier of the site or in the vicinity of the site may reasonably expect to use or be able to use groundwater for those purposes".
- Section 13.4 states: "Beneficial uses of groundwater may be considered 'relevant' for the purpose of determining whether to issue a Certificate in the following circumstances:
  - Where the beneficial use is 'existing' in the vicinity of the site. A beneficial use may be considered 'existing' where an existing receptor (bore, spring, creek) is or could plausibly be impacted by the pollution or reasonably foreseeable conditions (including altered groundwater flow resulting from abstraction, injection or other means).
  - Where the beneficial use is 'likely' to be realised in the vicinity of the site. A beneficial use may be considered 'likely' in circumstances including but not limited to, the following:
    (i) groundwater is used in the same hydrogeological setting nearby or elsewhere in Victoria, and
    (ii) the existing and likely future land uses both at the site and in the vicinity of the site are compatible with the beneficial use".

In this case the groundwater protected beneficial uses have been determined on the basis of the Groundwater SEPP for the purposes of this report.

TDS measured in the groundwater at the site ranged from 4660 mg/L (MW7 in 2009) to 7100 mg/L (MW8 in 2011) (OTEK 2012). Therefore, under the Groundwater SEPP, groundwater at the site would be classified as Segment C. Accordingly, the relevant beneficial uses of groundwater to be protected are:

- Maintenance of Ecosystems;
- Stock watering;
- Industrial water use;

- Primary contact recreation (e.g. bathing, swimming); and
- Buildings and structures.

3.4 Adopted investigation levels – groundwater

Table 3 of the Groundwater SEPP specifies the water quality investigation indicators required to protect beneficial uses. These investigation levels are specified in Table 9 below. In its 2012 assessment report, OTEK adopted ANZECC 1992 guidelines for comparison purposes. The auditor requested OTEK consider the more recent ANZECC 2000 and NHRMC 2008 guidelines. The auditor considered the most recent guidelines, as summarised in Table 9 below. The adoption of these more recent guidelines does not, in this instance, alter the conclusions OTEK reached based on its consideration of ANZECC 1992.

Table 9 Groundwater quality indicators

Beneficial Use Category	Water Quality Indicators
Maintenance of Ecosystem	Those specified in the relevant SEPP for surface waters as this beneficial use applies at the point of discharge of groundwater to a receiving surface water body. This site is located within the "Cleared Hills & Coastal Plains" segment covered by the *SEPP Waters of Victoria* (June 2003). The environmental quality objectives specified for this segment are those values in the ANZECC 2000 guidelines, and the level of ecosystem protection for this Segment is generally 95% for slightly to moderately modified aquatic ecosystems.
Potable Water Supply (Desirable and acceptable)	ANZECC (2000) *Australian Water Quality Guidelines for Fresh and Marine Waters*, refers to the Australian NHMRC and ARMCANZ (1996) *Australian Drinking Water Guidelines*. The NHMRC and ARMCANZ (2004) Australian Drinking Water Guidelines supersede these guidelines.
Potable Mineral Water	Australian Food Standards Code (1987) – Standard 08 Mineral Water, criteria for potable mineral water supply.
Agriculture, Parks & Gardens	ANZECC (2000) *Australian Water Quality Guidelines for Fresh and Marine Waters*, investigation levels for Primary Industries.
Stock Watering	ANZECC (2000) *Australian Water Quality Guidelines for Fresh and Marine Waters*, investigation levels for Primary Industries.
Industrial Water use	ANZECC (2000) *Australian Water Quality Guidelines for Fresh and Marine Waters* do not provide specific guidance for industrial water use, because industrial water requirements are so varied (both within and between industries) and sources of water for industry have other coincidental environmental values that tend to drive management of the resource. Industrial water use has been considered through regard for other environmental values.
Primary Contact Recreation	The ANZECC (2000) *Australian Water Quality Guidelines for Fresh and Marine Waters*, Guidelines for Recreation Water Quality and Aesthetics which supersede these guidelines refers to the NHMRC (2008) *Guidelines for Managing Risks in Recreational Water.*
Buildings & Structures	Introduced contaminants shall not cause groundwater to be corrosive to structures or building materials (pH, sulphate, redox potential). Investigation levels are not specified and reference has been made to AS2159-2009 Piling – Design and installation.

3.5 Beneficial uses of the air environment

The State Environment Protection Policy *(Air Quality Management)* December 2001 (AQM SEPP) states (Clause 9) that the following beneficial uses are protected in the ambient (outdoor) air environment throughout the State of Victoria:

a. life, health and well-being of humans;

b. life, health and well-being of other forms of life, including the protection of ecosystems and biodiversity;

c. local amenity and aesthetic enjoyment;

d. visibility;

e. the useful life and aesthetic appearance of buildings, structures, property and materials; and

f. climate systems that are consistent with human development, the life, health and well-being of humans, the protection of ecosystems and biodiversity.

Table 10 below outlines the likely impact scenarios and provides a screening analysis of the beneficial uses of air for further consideration (if any), as relevant to this site:

Table 10 Relevance of beneficial uses of air

Beneficial Use	Possible Exposure Scenarios	Requires Further Consideration?
Life, health and well-being of humans	Volatile contaminants were not reported during assessment works at the site.	No
Life, health and well-being of other forms of life, including the protection of ecosystems and biodiversity	Volatile contaminants were not reported during assessment works at the site.	No
Local amenity and aesthetic enjoyment	Odours were not reported during assessment works at the site.	No
Visibility	Given the site coverage at the completion of the audit, it is unlikely that significant dust would result in impact to this beneficial use.	No
Useful life and aesthetic appearance of buildings, structures, property and materials	Volatile contaminants and odours were not reported during assessment works at the site.	No
Climate systems that are consistent with human development, the life, health and well-being of humans, the protection of ecosystems and biodiversity	Volatile contaminants were not reported during assessment works at the site.	No

4. Site Investigation Activities

4.1 Chronology of site activities relevant to the environmental audit

The chronology of site activities and a description of the soil and groundwater works undertaken relevant to the environmental audit is presented in Table 11. The auditor's opinion of the adequacy of the assessment results and a consideration of risks to human health and the environment is discussed in Sections 5 (soil) and 6 (groundwater).

Table 11 Sequence of site activities

Date of Investigation	Site Activity and Objective	Summary of Findings
1993 - 2001	Various historical reports were prepared for the Overall Audit Area (see Section 1.4).	Former site uses included farming and grazing, and a brief period of RAAF use for officer accommodation and workshop. Potentially contaminating sources included a septic tank, latrine, workshop and a possible UST in the vicinity of the northern site boundary and two confirmed USTs near to the south western boundary. Information contained in these reports is discussed in Section 2.8.1.
2002 (OTEK, 2002)	OTEK undertook a site history investigation (OTEK, 2002) of the Overall Audit Area to assess whether infrastructure and former activities may have resulted in contamination (refer Section 2.8). This review included the above mentioned reports so that the overall information collected from different sources were brought together and used to develop a good understanding of the potential source(s) of contamination, and then set up a work plan to investigative such potential source(s).	The historical and physical reviews indicated that contamination may exist due to previous activities and uses of the land.
April 2008	Based on the abovementioned history review, OTEK undertook a soil investigation at the site, including collection of soil samples from 62 grid-based test pits. Select soil samples were analysed individually, and/or combined into three-part composites for analysis.	Analytical results from the majority of grid-based samples were below the HILA and EIL investigation levels, with the exception of two individual samples containing concentrations of barium marginally above the EIL only. Concentrations of arsenic, barium, manganese, nickel and vanadium were above the modified EILs in numerous 3-part composite samples (see Section 5.2 for details). OTEK did not observe asbestos during sampling, nor was asbestos identified in any samples analysed.
April 2008 and February 2009	OTEK undertook a targeted soil sampling program to investigate the former workshop, septic tank, ablutions and latrine. Samples were collected from seven test pits.	OTEK subsequently concluded (in OTEK 2012) that sampling locations did not actually target the intended infrastructure (discussed further in Section 5 below). Locations were, therefore considered as part of the grid-based sample location dataset.

Date of Investigation	Site Activity and Objective	Summary of Findings
		All results were below the EILs and HILs, with the exception of one barium concentration above the EIL (see Section 5.2 for details).
February 2009	At the auditor's request, OTEK undertook a visual assessment of the soils at the base of the dry pond. A trench of approximately 20 m was excavated into natural soil, and three additional test pits were excavated within the pond boundaries.	The soil profile across all excavations (trench, three observation test pits, and three grid sampling locations) was observed to be consistent. The soils beneath the pond comprised surface sand and gravel with shell grit, underlain by low permeability imported clay to 0.6 mbgl, then natural silt consistent with the rest of the site and Overall Audit Area (OTEK 2012). The auditor observed the trenching investigation. Analytical results from three grid-based test pit locations that were located within the pond footprint were below the investigation levels. No visual or olfactory signs of contamination were observed.
February and October 2009	Two monitoring wells were installed at the site, as part of a hydrogeological assessment of the Overall Audit Area. Wells were located to target the suspected UST in Area 5 (MW-7) and the removed UST in Area 1 (MW-8).	Soil samples were collected during drilling of the monitoring wells. The majority of results were below the investigation levels, with the exception of minor exceedences of the EILs for manganese, nickel, and vanadium (see Section 5).
July 2009	OTEK supervised the removal of the septic/soakpit fill material and concrete slab (formerly a workshop), and undertook validation sampling of the underlying soils.	OTEK observed that natural soil directly underlay all former infrastructures. The septic/soak pit was described as comprising buried basalt cobbles and boulders, which was excavated to a maximum depth of 3.3 mbgl. In addition to the primary excavation, OTEK identified a shallow "U shape" of cobbles/boulders (0.1 m depth) that extended to the southeast of the septic; refer to as the soak pit. OTEK indicated the concrete slab (former workshop) was reportedly in good condition, with no staining or cracks evident). There was no visual or olfactory evidence of contamination beneath the concrete slab or septic/soak pit (OTEK 2012). Validation samples were collected from the base and walls of the main septic excavation, the base of the septic/soak pit and beneath the concrete slab. The majority of results were below the investigation levels with the exception of barium in one validation sample from the base of the septic/soak pit. Nitrate/nitrite concentrations ranged from below the laboratory detection limit to low. The septic/soak pit excavation was backfilled with previously validated imported fill material (refer Section 5.3).

Date of Investigation	Site Activity and Objective	Summary of Findings
25-26 November 2009	Groundwater monitoring event across Overall Audit Area, including MW-7 and MW-8.	No evidence of hydrocarbon contamination, with the exception of a low concentration of TPH C_{15}-C_{28} in MW-8 (in both the primary and field duplicate sample). Concentrations of nitrate, sodium, sulphate, boron, copper, manganese, nickel, selenium and zinc were identified above the guidelines for one or more of the beneficial uses maintenance of ecosystems, primary contact recreation and stock watering (see Section 6.4 for details).
October 2010	OTEK supervised the removal of the asbestos water pipe (approximately 20 m length), and collected two validation samples from the base of the trench.	No visual evidence of asbestos contamination was observed. Asbestos was not detected in either sample. The excavation was backfilled with the soils formerly overlying the asbestos pipe.
7 December 2011	Groundwater monitoring event across Overall Audit Area, including MW-7 and MW-8.	No evidence of hydrocarbon contamination. Concentrations of nitrate, sodium, sulphate, boron, copper, nickel, selenium and zinc were identified above the guidelines for one or more of the beneficial uses maintenance of ecosystems, primary contact recreation and stock watering. These concentrations were considered to be naturally occurring and as such were not considered to impact relevant beneficial uses (see Section 6.4 for details).

4.2 Field sampling and laboratory testing program

The field sampling and laboratory testing program was designed by the assessor to identify contamination in the natural soils, any fill materials on site, and the groundwater beneath the site. The auditor reviewed various Sampling and Analysis Plans (SAPs) prepared by the assessor for various phases of work and provided feedback to OTEK.

Analysis of soil samples was undertaken by the following laboratories:

- Primary Laboratory: ALS and Labmark Laboratories Pty Ltd (Labmark); and
- Secondary (split sample) testing: Labmark and Groundswell Laboratories (Groundswell).

The assessor indicated these laboratories were NATA accredited for the testing undertaken. The auditor noted the laboratory reports received were NATA stamped and signed by NATA signatories.

4.3 Review of quality assurance and quality control

The auditor undertook a detailed review of the Quality Assurance and Quality Control (QA/QC) documentation presented by the assessors, and reviewed OTEK's field procedures to verify the integrity and the reliability of the data presented. This review is provided in Appendix E, and indicated the following:

- Overall the frequency and analytical suite of QC samples, specifically field duplicate and field split samples was slightly less than required. The auditor communicated this to OTEK on several occasions. Based on the following, the auditor was satisfied that sufficient information was available to assess the integrity and the reliability of the data set:

  - OTEK followed correct field sampling procedures, and samples were stored and handled appropriately;
  - Laboratory analytical results were consistent with site observations and site history review, and with findings from the Overall Audit Area; and
  - Results for QA/QC samples that were analysed indicated good field and laboratory accuracy and precision.
- The RPDs were generally acceptable, except a limited number of results that were above the recommended range for calculated RPDs for soil and groundwater results. These were considered minor in the context of the entire data set. It was also considered that at least partly this would be due to the inherent soil heterogeneity.
- All rinsate and trip blank sample results were below the laboratory detection limit for all analytes tested. While trip blank samples were not always analysed for volatile contaminants (as is standard practice) this was not considered a significant issue given that volatile contaminants were not detected in soil or groundwater. Additionally and based on historical activities at the site volatiles were not considered CoPC.
- Sample holding times were generally acceptable. Where holding times were occasionally exceeded, the auditor was satisfied that analytical results were unlikely to have been compromised given correct handling and storage of samples, and low likelihood of the specific contaminants being identified.
- Laboratory internal QA/QC results were generally acceptable. Minor exceedances were noted on the laboratory reports and discussed by OTEK.
- As discussed in Section 5.1.1, composite samples were analysed for pH and semi-volatile analytes (PAHs, OCPs/OPPs), which is not in accordance with Australian Standard 4482.1. However, given a reasonable number of individual samples were analysed for pH, PAHs and OCPs/OPPs across the site (refer Table 13) and the results of the composite samples were consistent with the results of the individual samples, as well as those from the Overall Audit Area, this error in methodology was not considered to be an issue of concern.

Auditor verification activities

The Auditor and/or his representative observed the field investigations across the Overall Audit Area on numerous occasions. Works were frequently undertaken both on the site and other audit Areas during the same sampling event. Of particular relevance to the site were the following:

- 14 January 2009: the auditor's representative inspected the removal of two diesel and two petrol USTs from the north eastern portion of offsite Area 1, proximate to the south western boundary of the site. A small amount of impacted soil was observed associated with the bowser stand. No visual evidence of contamination was identified in the tank nest sand. Subsequent validation assessment of the excavation did not indicate any residual hydrocarbon contamination in soils (OTEK, 25 March 2009, Riverwalk Area 1 – UPSS Removal and Validation Interim Report);
- 19 January 2009: the auditor inspected the UST pit in offsite Area 1 following the excavation. The pit appeared clean with no staining, odour or groundwater observed within the pit. All infrastructures had been removed from the site. The auditor was advised by OTEK staff present that the USTs were intact with no sign of erosion or other damage;
- 9 February 2009: the auditor inspected a trench that was excavated in the middle of the pond that intersected Area 1 and Area 4A, to assess the base soils. The lake was dry at the time of the inspection. The trench was excavated approximately 0.5 m into natural

material. There was no visual or olfactory evidence of contamination, or aesthetically unacceptable material. The auditor requested OTEK excavate three additional test pits across the remaining pond area: a similar soil profile was identified and observations made, with the lake clay lining thickening towards the 'island' edge and to the edge of the lake. Prolific shell material was noted towards the 'island' edge.

- 20 October 2009: the auditor's assistant visited audit Area 4B (to the east of the site) to inspect the drilling and installation of groundwater monitoring well MW9. This monitoring well was installed during the same field program as MW8 on the audit site (Area 4A) and hence is considered relevant to this audit. Drilling had intersected a band of river bed soils, but had not intersected groundwater during the auditor' assistant's inspection. Appropriate drilling methodologies were being employed.
- 21 February 2013: the auditor conducted his final site inspection and found no visible changes to the physical status of the site as described in this report. There was a well on the site that was not installed by OTEK and was not used as part of the site assessment. The well was installed by another consultant as part of the wide network of wells installed across the western treatment plan for the purpose of monitoring the levels of groundwater. While inspecting the site, the auditor opened the unlocked well caps and did not observe any odour.

Conclusions on QA/QC

Overall the laboratory results were considered to be consistent with the site history review and field observations made during the assessment of the site. The auditor was satisfied that the sampling undertaken was adequate and the laboratory results reported were representative of the condition of soil and groundwater on site at the time of the assessments.

5. Assessment of Soil Quality

A summary of the locations of key information within the Assessor's report is provided in Table 12 below.

Table 12 Assessor's site assessment information – soil

Assessment Details	Section in Assessor's Report (OTEK 2012, attached as Appendix C of this report)
Site History	Section 3
Details of soil sampling (including for the assessment, remediation, and validation) and laboratory analysis	Sections 6, 9 and 13.1
Field Observations	Sections 4.1, 6.3.1.4, 6.3.3, 6.3.5 and 9.2.2
Borelogs	Appendix C
Site Plans	Figures 1 to 6A
Analytical Results (Summary Tables)	Tables 1 to 41

5.1 Soil sampling and analytical program

To assess soil quality at the site, OTEK collected soil samples from grid based and targeted locations and, at the auditor's request undertook a trenching exercise within the drained pond to visually inspect the material lining the pond base. OTEK summarised the soil investigation activities in Section 6.3 of OTEK 2012 (attached as Appendix C of this report).

5.1.1 Grid samples

A total of 62 grid-based soil sampling locations (i.e. test pits) were advanced at the site in April 2008. This provided a sampling density of 10.5 locations per hectare, which is marginally less than the density specified in Australian Standard (AS4482.1) which indicates that to detect hot spots of contamination of 35.6 m diameter (refer Table E1 of AS4482.1) with a confidence of 95%, 11 sampling points per hectare are required for a 5.0 ha site. However, it was noted AS4482.1 does not provide guidance on sites larger than 5.0 ha other than stating the sites "are usually subdivided into smaller areas for more effective sampling". Grid soil sampling locations are shown on Figure 4. Given the majority of the site was essentially green field, infrastructure was removed and appropriate validation sampling was undertaken, and the number of target sampling conducted, the auditor considered the sampling density adequate to characterise the site.

Sixty-two individual samples from the grid based test pits were selected for laboratory analysis. Additionally, 48 three-part composite samples were formed from 48 of the 62 grid based test pit locations; 43 of these composites were then analysed (composites from deeper samples were held at the laboratory but not analysed). Table 13 below provides a summary of the grid and composite analytical schedule (derived from Tables 1 through 10 in OTEK 2012).

Table 13 Grid-based sample analytical schedule

Analyte	No. of individual samples analysed	No. of composite samples analysed
Inorganics[1]	37	41
OCPs	40	12
OPPs	31	12
Asbestos	30	-
pH	29	12
EPA screen[2]	2	-
PAHs	43	24
TPHs	42	-

NOTES:
[1] Inorganics: As, Ba, Be, Cd, Cr, Co, Cu, Pb, Mn, Ni, V, Zn, Hg
[2] EPA screen: Inorganics, Cr^{6+}, cyanide, fluoride, phenols, BTEX, TPHs, MAHs, OCPs, PCBs, chlorinated hydrocarbons.

It was considered that, based on the site history and limited potential for contamination across the broader site area sufficient samples were analysed for CoPC.

It was noted that the 2008 Sampling and Analysis Plan was developed prior to the 2009 *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in WA (DOH, 2009)* asbestos guidelines. OTEK noted that approximately 50% of all soil samples from across the site (grid, target and validation) were analysed for asbestos, which OTEK states (OTEK 2012) exceeds the minimum density requirements specified in DOH 2009. Based on the site history review and field observations, it was considered there was insignificant potential for risk associated with asbestos across the site. The only specific source of asbestos identified was the water bearing pipe, which was appropriately removed and validated (refer Section 6.3).

Composite samples were analysed for pH and semi-volatile analytes (PAHs, OCPs/OPPs), which is not in accordance with Australian Standard 4482.1, and is not standard industry practice. The Auditor followed up with OTEK, which acknowledged that this practice was not appropriate, but it considered that composite results still provided information regarding the condition of soils at the site (OTEK 2012). The auditor considered the composite results in his assessment of the site condition, and noted they were consistent with results from individual sample analyses from the site. Given a reasonable number of individual samples were analysed for pH, PAHs and OCPs/OPPs across the site (refer Table 13) and results were consistent with data from the Overall Audit Area, this error in methodology was not considered to affect the outcome of the audit.

5.1.2 Target samples

A total of 18 target and validation sampling locations were advanced between April 2008 and October 2010 to further assess potential contamination sources that were identified as part of the site history review (as discussed in Section 2.9). Works undertaken are summarised in Table 14.

Table 14 Potential contamination sources and associated target sampling locations

Potential Contamination Source	No. of Target Sampling Locations	Sampling Locations	Date/s	Analytes [2]
RAAF infrastructure: workshop, septic tank, ablutions, latrine	7	4A/T5, 4A/T1A, 4A/T2A, 4A/T3A, 4A/T1B, 4A/T2B, 4A/T3B	April 2008[1] & February 2009	Inorganics, TPHs, PAHs, OCPs, OPPs, asbestos, pH, EPA screen, nitrate, nitrite, ammonia.
Potential offsite USTs (Area 1 and Area 5).	2	4A/B-7 (MW7) and 4A/B-8 (MW8).	February 2009 (MW7), October 2009 (MW8).	Inorganics, EPA screen, PAHs, TPHs, BTEX, OCPs, OPPs, PCBs.
Pond	Trenching 3 grid locations	A4/G14, A4/G15, A4/G18	April 2008	EPA screen [3] (G14), asbestos (G15), inorganics (2 composite samples)

NOTES:
[1] Sample 4A/T5 was collected in 2008. No further samples were collected during this time due to the identification of a fibre optic cable. Sampling recommenced in February 2009.
[2] Samples were analysed for one or more of COPCs (i.e. not all samples were analysed for all analytes)
[3] EPA screen: Inorganics, As, Cd, Cr^{6+}, cyanide, fluoride, phenols, BTEX, TPHs, MAHs, OCPs, PCBs, chlorinated hydrocarbons.

Targeted Sampling

In response to the auditor's query regarding the intent of the targeted samples (i.e. which potential source the locations were intended to target, as it was not clear from the initial information provided by OTEK), OTEK indicated (in OTEK 2012) that the seven sampling locations that were intended to target the RAAF infrastructure (former workshop and concrete slab) were actually sited incorrectly, and did not correspond with the footprint of former infrastructure. Given the infrastructure was subsequently removed, and OTEK validated the underlying soils (discussed in Section 5.3), OTEK concluded that this oversight did not compromise the overall objective of assessing impacts associated with infrastructure. The auditor concurred that in this instance, given the subsequent removal of the concrete slab and validation of underlying soils, the absence of samples targeting the former workshop and residual concrete slab was not significant. The auditor considered the observations made during removal of the concrete slab and validation sampling undertaken provided sufficient evidence that no contamination of concern had arisen from the former infrastructure (refer Section 5.3).

It was considered that the sleeping huts and officers' antechamber (removed prior to the commencement of the audit) were not potential sources of contamination. As such, and with the sampling results from the site, no targeted samples were collected from these areas.

OTEK undertook extensive searching for the suspected UST in Area 5 in December 2010 (reported as *Environmental Site Assessment, Riverwalk Area 5, 2013)*, but no evidence of a former or existing UST was identified. The UST in Area 1 was removed during 2009 (reported as *Riverwalk Area 1 – UPSS Removal & Validation*, 2009). No residual hydrocarbon contamination was observed in underlying soils. OTEK provides a discussion regarding both USTs in Section 5.4.2 of OTEK 2012.

Pond Trenching

In addition to the above sampling program, OTEK undertook trenching of the pond base to gain an understanding of underlying soils; this was requested and observed by the auditor. A 20 m

trench was excavated to 0.6 mbgl, and three randomly positioned test pits were excavated to 1.0 mbgl. OTEK indicated the pond was lined with sand and gravel with shell grit, underlain with imported clay fill. The auditor's field observation noted the soil profile was consistent across all excavations. Additionally, three of the grid-based trench locations were situated within the footprint of the pond. Samples were collected and analysed for a range of COPC (discussed further in Section 5.1.1).

Infrastructure Removal and Validation Sampling

Infrastructure including fill material in the former septic/soak pit area, the workshop concrete slab, and an asbestos water pipe were removed during the audit. Validation samples were collected to assess the potential contamination from these sources; this is discussed further in Section 5.3.

5.1.3 Auditor's opinion on adequacy of soil assessment program

The auditor and his support team assessed the information available. It was considered that overall the grid-based and targeted sampling locations and analytical program provided adequate coverage to allow determination of the potential risk from potentially contaminating sources at the site. This was based on the following lines of evidence:

- *The auditor, based on the site history information and his field visit reviewed and provided feedback on the sampling and analysis plans prior to commencement of work;*
- *The sampling program was based on a thorough understanding of potential sources and activities which might have resulted in contamination of soil at the site;*
- *The analytical program sufficiently addressed all identified COPC;*
- *Despite OTEK incorrectly positioning the targeted sampling locations (as discussed in Section 5.1.2 above), all infrastructure was subsequently removed and underlying soils validated;*
- *Samples were collected using appropriate methodologies; and*
- *The auditor and his assistant undertook multiple site visits during the assessment of the site, and of the Overall Audit Area*

It is noted the auditor had to provide numerous comments regarding OTEK's draft ESA reports before a report of suitable quality was provided.

5.2 Summary of soil assessment results

5.2.1 Inorganics

A total of 13 *individual* soil samples contained concentrations of one or more of barium, manganese, nickel and vanadium above the EILs. Additionally, multiple *composite* samples contained concentrations of one or more of arsenic, barium, manganese, nickel and vanadium above the modified EILs. Concentrations of all other CoPC were below the EILs.

Concentrations of all CoPCs analysed were below the HILs.

A summary of maximum concentrations of each contaminant identified above the adopted investigation levels in fill and/or natural soil during the assessment works is provided in Table 15 below. The table shows only individual samples containing contaminants at concentrations exceeding the adopted investigation levels (i.e. samples with concentrations below the investigation levels have not been included), and does not include composite samples, which are discussed further below.

A full summary of soil analytical results is presented in Tables 1 to 23 of OTEK 2012, attached as Appendix C of this report.

Table 15 Summary of maximum contaminant exceedances in soil (individual samples)

Analyte	NEPM or Adopted Investigation Level (mg/kg)		Sample Type	Concentration (mg/kg)	Fill/ Natural	Samples exceeding adopted investigation level
	NEPM EIL	NEPM HIL A				
Barium	300	-	Grid	310	Natural	4A/G9/0.25
			Grid	540	Natural	4A/G59/0.25
			Target[1]	430	Natural	4A/T3B/1.0
Manganese	500	*1500*	Target (well)	750	Natural	4A/B-8/3.0
			Target (well)	630	Natural	4A/B-8/6.0
			Target (well)	620	Natural	4A/B-8/7.0
			Target (well)	820	Natural	4A/B-8/8.0
			Target (well)	640	Natural	4A/B-8/9.0
			Target (well)	900	Natural	4A/B-8/10.0
			Target (well)	500	Natural	4A/B-8/12
Nickel	60	*600*	Target (well)	150	Natural	4A/B-8/10.0
			Target (well)	130	Natural	4A/B-8/12
Vanadium	50		Target (well)	51	Natural	4A/B-8/9.0

NOTES:
Underlined: result higher than NEPM EIL investigation levels
Italics: result higher than NEPM A investigation levels
[1] As discussed in Section 5.1.2, sample was incorrectly sited, and therefore did not actually target intended infrastructure.

The following provides a discussion of each analyte where concentrations exceeded the EIL. Also, as OTEK did not refer to any investigation levels in OTEK 2012 for the results of nutrient (i.e. nitrate, nitrite and ammonia) analyses, the Auditor also discussed these as they were considered CoPC.

Arsenic, Barium, Manganese, Nickel, Vanadium

Multiple composite samples contained concentrations of the following contaminants above the modified ecological investigation levels (as per AS4482.1 the investigation levels were divided by number of samples in the composite, which is conservative in reality; AS4482.1 indicated that such "method of adjustment may give rise to false positive results"), as outlined in Section 9.1.8.2 of OTEK 2012 (attached as Appendix C):

- Arsenic: six composites.
- Barium: 16 composites.
- Manganese: 41 (all) composites.
- Nickel: 38 composites.

- Vanadium: 41 (all) composites.

OTEK did not analyse any individual samples from composites containing concentrations above the modified investigation levels, due to an oversight. However, 37 other individual samples from across the site were analysed for inorganics (including arsenic, barium, manganese, nickel and vanadium), with the following results (as summarised in Table 15):

- Arsenic: Concentrations of arsenic were below the EILs for all samples. On this basis, and considering the comparability of results with the Overall Audit Area, and absence of a specific source for arsenic, the arsenic detected in composite samples is considered naturally occurring and is not discussed as an exceedance henceforth;
- Manganese, nickel and vanadium:
  - Concentrations of manganese, nickel and vanadium were below the EILs for all shallow (i.e. <1.0 mbgl) grid-based samples;
  - Multiple samples taken during the installation of monitoring wells from depths greater than 3 mbgl reported concentrations of manganese, nickel and vanadium above the EILs;
- Barium: Three samples reported concentrations of barium above the EIL. The 95% UCL for barium was below the EIL (OTEK 2012), and all concentrations were less than 250% of the EIL.

The concentrations of barium, manganese, nickel and vanadium detected in individual samples during the soil assessment works were considered to be naturally occurring, based on the following:

- Samples were all collected from natural soils;
- Results were consistent with concentrations detected across the Overall Audit Area (as detailed in Section 13.1.1, Table N of OTEK 2012);
- There were no identified potential sources of these contaminants;
- The 95% UCL for barium at 0.25 m and 0.5 m depths was less than the EIL, and no single result was greater than 250% of the EIL (the 95% UCL was not calculated for manganese, nickel and vanadium as insufficient samples were available from each depth interval. Also, the low concentrations detected did not necessitate such need especially at depths of greater than 1 mbgl); and
- Concentrations were all within NEPM background ranges.

It is acknowledged that where sample compositing is undertaken and investigation level exceedances occur, individual samples should subsequently be analysed. The auditor communicated this to OTEK, which indicated the omission was an oversight. In this instance the auditor did not consider the oversight to be significant, given the generally low concentrations of inorganics detected and the above lines of evidence. The auditor considered sufficient data were available to indicate that concentrations of barium, manganese, nickel and zinc are unlikely to pose a risk to beneficial users of the land.

Nitrate, nitrate and ammonia

Target samples were also analysed for nitrate, nitrite and ammonia (as detailed in Table 14). All nitrate and nitrite results were low (maximum nitrate concentration 2.7 mg/kg in target sample 4A/T1A/0.25, nitrite 0.3 mg/kg in 4A/T5/0.25) and were within the range of concentrations detected in the Overall Audit Area (provided in Table K in OTEK 2012). Ammonia was not detected in any sample. Based on this, it was considered these concentrations were likely

representative of background conditions, and unlikely to be attributed to historical activities at the site. Further discussion is provided in Section 5.5.

5.2.2 Organics

All concentrations of all organic analytes tested were below the investigation levels, and predominantly below the laboratory limits of reporting.

Auditor's Opinion on the Soil Assessment Results

The auditor concluded that the information obtained during the soil assessment, including field observations and analytical results, indicated that the identified potential contamination sources and activities historically undertaken at the site had not resulted in soil contamination. Concentrations of several inorganics above the investigation levels for maintenance of ecosystems were considered to be naturally occurring, based on NEPM background ranges, data from the Overall Audit Area, and absence of potential sources.

5.3 Infrastructure Removal and Validation Sampling

During the course of the soil assessment works (discussed in Sections 5.1 and 5.2) remains of former RAAF infrastructure including the septic/soak pit, a concrete slab associated with a former workshop, and an asbestos pipe were removed from the site, and the underlying soils validated. Figure 3 shows the location of former RAAF infrastructure (including structures removed prior to the commencement of the audit). The resultant excavations and validation sampling locations are shown in Figures 6 and 7. Details of works undertaken are summarised in Table 16 below.

Table 16 Assessment and removal of infrastructure and validation sampling

Works Undertaken	Date of Works	Validation Samples Collected	Analysis [1]	Sample(s) exceeding adopted investigation level	Backfill/Site reinstatement
Removal of rubble from former septic and soak pit.	July 2009	4A/T5/VS-1 to 4A/T5/VS-5	Inorganics, OCPs, TPHs, PAHs, ammonia, nitrate, nitrite, e.Coli, coliform, sulphate, pH, asbestos.	4A/VS-2	Imported fill material
Concrete slab (formerly workshop)	July 2009	4A/VS-3, 4A/VS-4	Inorganics, pH, nitrate/nitrite/ammonia, e.Coli, coliform, sulphate	None	Not applicable
Asbestos pipe	October 2012	4A/VS-6, 4A/VS-7	Asbestos	No asbestos detected.	Soil formerly overlying pipe (disturbed natural soil).

NOTES:
[1] Samples analysed for one or more of listed analytes (i.e. not all samples analysed for all analytes)

OTEK confirmed all validation samples were collected from natural soils, which were consistent with natural soils observed across the remainder of the site (refer Section 2.2). PID readings were negligible in all samples (0.0 to 0.9 ppm), and OTEK indicated there were no visual or olfactory observations of hydrocarbons or other volatiles.

Septic/soak pit

The septic/soak pit was described by OTEK (in OTEK 2012) as containing boulders and cobbles to a maximum depth of 1.3 m, underlain by natural soils. OTEK did not observe any visual or olfactory signs of contamination. The concrete slab and asbestos water pipe were also underlain by natural soils, with no evidence of impact.

OTEK indicated the fate of the excavated cobbles/boulders from the former septic/soak pit was not known. The auditor did not consider this to be an issue as the composition of the material removed (boulders and cobbles) meant it was unlikely to be contaminated, and results from underlying soils did not indicate any gross contamination.

Concrete slab (former workshop)

Due to an oversight by OTEK, the two validation samples collected beneath the concrete slab were not analysed for organic CoPC (e.g. TPHs or PAHs). When the auditor queried this due to the fact that TPHs and PAHs were identified as CoPC, OTEK acknowledged the analysis had been erroneously omitted. OTEK outlined in Section 6.3.5.2 of OTEK 2012 that it was considered unlikely that soils beneath concrete slab were contaminated by organics, due to the following multiple lines of evidence:

- There were no visual or olfactory signs of hydrocarbon impacts to the soil underlying the concrete slab. PID readings were very low (0.3 and 0.4 ppm);
- The concrete slab was in good condition, with no cracks or staining evident;
- The small footprint of the workshop (3 x 2 m) suggests that, even if there was any historical hydrocarbon storage or use it would have been minimal due to space restrictions. There was no specific evidence of hydrocarbon storage or use within the workshop, which was located in the vicinity of accommodation huts rather than RAAF maintenance areas;
- The low permeability soils underlying the concrete would have minimised any vertical migration, should hydrocarbons been present and spilled; and
- Had any surface hydrocarbon spills occurred, they would have significantly degraded over the approximately 60 years since the workshop was removed (circa 1950s).

The auditor also noted the following:

- There was no indication of hydrocarbon contamination in nearby groundwater monitoring wells (MW-7 located up gradient, and MW-9 located within Area 4D down gradient);
- As some petroleum products historically contained lead, which is persistent in the environment, the presence of lead in soil might have indicated petroleum spillage. However, concentrations of lead in soil were low, well below the adopted investigation levels, supporting the conclusion that no leaks or spills of petrol beneath the workshop had occurred. Additionally, all concentrations of inorganics analysed in the two validation samples were below the relevant investigation levels, which indicated contamination by products such as waste oil (also typically assessed through analysis of TPHs and PAHs) were unlikely; and
- In addition, during his final site inspection, undertaken on 21 February 2013, the auditor noted there were no visible signs of contamination in the vicinity of the former workshop, with the area vegetated with healthy grass.

Based on the above mentioned lines of evidence, the auditor was satisfied the likelihood of TPHs or PAHs contamination being present in soils in the vicinity of the former workshop was low.

OTEK noted the concrete slab and underlying disturbed natural soil was disposed of offsite, but no waste tracking documentation was available (OTEK 2012). Given the absence of any visual or olfactory signs of contamination and based on the lines of evidence presented above, this was not considered significant. The auditor further noted that OTEK indicated an appropriately licenced company (Enviropacific) were used to remove and dispose of the soil.

Asbestos Pipe

The asbestos pipe identified was associated with a former watering system and hydrant. The pipe was present only for approximately 20 m within Area 4A. It was removed and disposed of by licenced contractors (Enviropacific) in October 2012, and OTEK collected two validation samples (4A/VS-6 and (4A/VS-7) from the base of the excavation (approximately 0.7 mbgl depth), which equates to a frequency of approximately 1 per linear 10 m. Asbestos was not detected in these validation samples. OTEK provided a reasonable discussion behind the sampling rationale in Section 6.3.5.3 of OTEK 2012 (attached as Appendix C of this report). The auditor noted the frequency of judgemental sampling was in general accordance with *'Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in WA (DOH, 2009),* though OTEK developed the sampling and analysis plan prior to issue of these guidelines. The auditor was satisfied OTEK employed appropriate judgment when selecting validation sample locations and undertook adequate visual assessment for potential asbestos.

Backfill Material

Imported fill material sourced from Cemex Werribee Quarry (formerly Readymix Werribee Quarry) located at Wests Road, Werribee was used to backfill the septic and soak pit excavation. This material was formerly classified as suitable for use as backfill material across the Overall Audit Area. Details of sampling and analysis were provided under separate covers, which the auditor reviewed and provided comment on (attached as Appendix G). The fill material was found to contain concentrations of barium, manganese, nickel and vanadium above the EILs but within NEPM background levels. The concentrations were consistent with those detected at the site (as discussed in Section 5.2.1) and across the Overall Audit Area, and were considered to be naturally occurring given the basaltic origin of the material. The auditor was satisfied the material used to backfill excavations was of suitable quality for the proposed intended residential use of the site.

For ease of reporting, a summary of the final condition of soil at the site is presented in Section 5.5 below.

Auditor's Opinion on Infrastructure Removal and Validation Sampling

From a review of the information provided by OTEK, including description of infrastructure removed, validation sampling methodology, analytical suite and analytical results, the auditor considered that potential contaminating structures were adequately removed from the site, and the underlying soils appropriately validated. Although validation samples from beneath the former workshop concrete slab were not analysed for TPHs or PAHs, the auditor considered there was sufficient evidence (as outlined above) to demonstrate the likelihood of contamination of soil resulting from activities at the workshop was insignificant.

The remaining structures/features on site (i.e. dry pond, roadways, car park) were not considered to be potential sources of contamination.

5.4 Consistency with clean up regulations

Given that with the exception of a single barium concentration in one sampling location, there was no contamination identified at the site, remediation and offsite disposal of contaminated soils was not required. The asbestos pipe was removed and disposed offsite by a licenced contractor.

Although the fate of the boulders/cobbles removed from the septic/soak pit and concrete slab was not known, this was not considered an issue, as there was no indication of contamination within or underlying the material.

The auditor noted that OTEK 2012 referenced the appropriate waste guidelines for the duration of the works, and stated that works were undertaken in accordance with these guidelines.

5.5 Summary of final soil conditions and protected beneficial uses of land

As discussed above, the remediation works involved the removal of potentially contaminating infrastructure. There was no requirement to conduct soil clean up, as contamination of concern was not detected in the validation analytical results.

Following completion of the assessment, infrastructure removal, and validation works; only one concentration of barium (above the EIL) remained onsite beneath the former septic/soak pit (4A/VS-2 with a concentration of, 1 530 mg/kg) as discussed in Section 9.1.8.3 of OTEK 2012 (attached as Appendix C on this report). Additionally, several minor concentrations of barium, manganese, nickel and vanadium above the EILs remained on the site, which were considered to be representative of background levels and not likely to pose a risk to ecological or human health (as discussed in Sections 5.5.1 and 5.5.2).

As discussed in Section 5.2.1 above, the analytical suite for soil validation samples included nitrate, nitrite and ammonia. OTEK did not compare the concentrations to any guidelines values, but indicated the nitrate and nitrite results at the site were well within the range of concentrations observed across the Overall Audit Area (refer Table K in OTEK 2012). Ammonia was not detected in any sample analysed. The auditor further noted that all concentrations were below 10 mg/kg, which is the concentration often required for pasture soils (NSW DPI, 2004). The samples collected in the vicinity of the septic/soak pit would be the most likely to exhibit high concentrations of nitrate, and hence the results obtained provide a ‘worst case’ scenario. As concentrations in these samples were all reasonably low (i.e. maximum nitrate concentration detected was 2.7 mg/kg in target sample 4A/T1A/0.25, and nitrite 0.3 mg/kg in 4A/T5/0.25), the site is not considered to have been impacted by nitrate from potential onsite sources (such as the septic / soak pit).

The potential for any ecological and human health risk from the concentration of barium identified in the validation sample is discussed below.

5.5.1 Maintenance of ecosystems

Concentrations of barium, manganese, nickel and vanadium above the EIL remained on the site. As discussed in Section 5.2.1, these concentrations were all detected in natural soils and are considered representative of background conditions.

One concentration of barium in a validation sample collected from beneath the soak/septic pit was an order of magnitude greater than other concentrations at the site and across the Overall Audit Area (1530 mg/kg in 4A/VS-2), and was greater than 250% of the EIL. OTEK attributed the single elevated result to a natural occurrence within the basalt, or an analytical anomaly. Based on the following lines of evidence, the auditor did not consider that the single barium concentration present in the validation sample poses an unacceptable level of risk to the maintenance of ecosystems:

- Barium is naturally occurring in most soils at concentrations ranging from about 15 to 3500 ppm and mean values ranging between 265 and 835 ppm, depending on soil type (ATSDR, 2007). The barium concentration was within the NEPM background range (100 – 3000 mg/kg);

- The highest concentration beneath the septic/soak pit was an isolated result. Several other samples collected from beneath the footprint of the septic/soak pit, which would have been exposed to the same potential source, were all below the EIL;
- The nature of the soil (i.e. silty clay, generally from volcanic origin) was expected to have above average cation exchange capacity (CEC) and hence higher adsorption capacity to reduce the likely migration of barium;
- Barium has low mobility in the majority of soils due to the formation of water-insoluble salts (ATSDR, 2007); and
- There was no potential anthropogenic source of barium identified during the site history review.

Additionally, the range of pH (5.6 to 9.3) encountered at the site was not expected to adversely impact the beneficial use maintenance of ecosystems, as it is naturally occurring and there was no visual effect on site vegetation.

5.5.2 Human Health

All concentrations of all analytes tested were below the investigation levels for protection of human health (HIL A).

5.5.3 Buildings & Structures

The pH in soils across all assessment and validation samples was broad, ranging from slightly acidic to alkaline soils (5.6 to 9.6). OTEK did not comment on the cause of pH variability.

The pH range observed was consistent with that observed in similar natural soils across the Overall Audit Area, and was consistent with the nature of the soil developed from the parent materials described in this report (refer to Section 2.2). Given the distribution of the pH results observed across the site, and given there were no identified potential sources that might have attributed to altering soil pH, the pH range observed was considered naturally occurring and not associated with any onsite anthropogenic source. The soil pH range observed was not expected to adversely impact the integrity of future concrete buildings and structures on site.

Additionally, OTEK compared soil sulphate concentrations and pH levels with the exposure classification for concrete piles in Australian Standard AS2159-2009. OTEK concluded soil at the site would not impact the integrity of structures or buildings.

Acid sulphate soils were not encountered or expected at the site given the geological conditions and location of the site.

5.5.4 Aesthetics

OTEK reported (in OTEK 2012) there were no offensive odours noted during field works, and the site was free of debris. The auditor, during his final site inspection on 21 February 2013, observed the site surface was predominantly covered with grass, shrubs and asphalt roadways. Part of a dry pond was present on the north western portion of the site (south western boundary intersects the pond). The auditor confirmed there was no visual evidence of changes in the physical appearance of the site from what was described in OTEK report (OTEK 2012).

5.5.5 Production of food, flora & fibre

The objectives of this beneficial use were discussed in Section 3.2.5, and are generally applicable in an agricultural setting for which produce may be available for consumption.

As noted in Section 3.2.5, OTEK adopted HIL A investigation levels when assessing this beneficial use. The auditor considered the EILs should also be taken into account. On this basis

the concentrations of barium, manganese, nickel and vanadium in a limited number of samples exceeded the EIL. As discussed previously (Section 5.2 and 5.3) these exceedances are considered to be naturally occurring, and are unlikely to pose an adverse impact to ecological receptors and hence nor to the beneficial use production of food, flora or fibre.

5.6 Off-site soil contamination

Based on the available information through the collation of data for the Overall Audit Area, there was no evidence that any activities undertaken on the site have resulted in contamination of soil at the surrounding sites.

5.7 Consistency of the proposed development with the condition of the site

As per the proposed development plan provided in Appendix D, the site was part of the Riverwalk Estate which was proposed to be developed for residential ‘single dwelling’ and ‘medium-density’ development and associated uses such as public open space and recreation areas.

Based on all the data available as discussed in this report, the auditor was of the opinion that the site was currently suitable for the proposed sensitive land use, as it was considered the relevant beneficial uses of the land were protected.

6. Assessment of Groundwater Quality

OTEK undertook a groundwater assessment across the Overall Audit Area, including the installation of 11 groundwater monitoring wells (MW-1 through MW-11) between June 2006 and October 2009. Two monitoring wells, MW-7 and MW-8 were installed within Area 4A. The findings of the overall groundwater assessment were reported under separate cover as a draft document (OTEK, 2010). The auditor referred to the draft hydrogeological report for background information, but did not rely on it for the purposes of this audit as the findings relevant to Area 4A (i.e. results for MW-7 and MW-8) were reported in OTEK 2012. A summary of key information within OTEK 2012 is provided in Table 17 below.

Table 17 Assessor's site assessment information – groundwater

Assessment Details	Section in assessor's report (OTEK 2012, Appendix C of this report)
Details of Groundwater Sampling and Analysis	Section 7
Field Observations	Section 7.1.3, Appendix H
Monitoring Well Logs	Appendix G
Field Measurements (Groundwater)	Appendix H
Site Plans	Appendix G
Analytical Results (Summary Tables)	Tables 42 to 52

6.1 Adequacy of the groundwater assessment program

Two groundwater monitoring wells were installed across the site to assess groundwater quality and the potential for adverse impact from potential sources identified, as detailed in Table 18.

Table 18 Monitoring well details

Monitoring Well ID	Potential Source Targeted	Total Well Depth (m)	Aquifer	SWL (mTOC)[1]	Top of screen (mbgl)
MW-7	Suspected former UST (within Area 5, no evidence of UST identified)	16	Newer Volcanics aquifer	10.5	9
MW-8	Former Area 1 USTs	15	Newer Volcanics aquifer	9.5	9

NOTES:
mTOC – metres below top of casing
mbgl – metres below ground surface
[1] Measured on date of well installation, as reported in OTEK 2012

Groundwater at the site and across the Overall Audit Area was inferred to flow towards the east (refer to Figure 8), which is consistent with the expected flow direction towards the Werribee River which runs along the east of the site and is located approximately 1 km to east north east of the Overall Audit Area (at its closest point), Regionally, the groundwater is expected to flow to the south east toward Port Phillip Bay located approximately 7 km to the south east of the site.

Monitoring well MW8 was installed on 26 October 2009 down gradient of the removed UST located near the eastern boundary of Area 1 (for which an Environmental Audit was completed in 2011), which was directly adjacent to the site. The main purpose of the installation of monitoring well MW8 was to assess whether this UST had resulted in an impact on the groundwater quality hydraulically down gradient, and also provide information about the groundwater quality in Area 4A.

Monitoring well MW-7 was installed in the location of a suspected UST to assess any potential adverse impact to groundwater. However, following detailed excavation works conducted by OTEK in the suspected area (as discussed in Section 2.9), a UST in this vicinity was not found. In addition, monitoring well MW7 was also considered adequate to provide information on groundwater quality within the northern portion of Area 4A.

Wells were installed using a combination of hollow stem augers and air hammer drilling through basalt to the maximum depth. Screens were constructed above the measured standing water in all wells, so that the potential for non-aqueous phase liquids (NAPL) and hydrocarbons (if any) could be adequately assessed if present. A sand pack was installed from the base of each well to 0.5 m above the screen, a bentonite seal of 1.0 m was installed above the sand pack, followed by grout to surface.

Both MW-7 and MW-8 were developed by injecting compressed air into the well to cause a surging, followed by pumping of water to remove fines (120 L and 150 L removed respectively).

Two rounds of groundwater sampling were undertaken of MW7 and MW8 (as part of sampling events of the Overall Audit Area), as summarised in Table 19.

Table 19 Summary of area 4A groundwater sampling events and analysis

Monitoring Event	Date	Analysis Undertaken
GME1	25-26 Nov 2009	BTEX, TPHs, inorganics, PAHs, phenols, VOCs, acidity/alkalinity, TDS, nitrate, sulphate
GME 2	7 December 2011	BTEX, TPHs, inorganics, acidity/alkalinity, TDS, nitrate, nitrite, sulphate

Groundwater samples were collected using low flow micro-purge to reduce the potential loss of volatiles. Purging continued until stabilisation of the groundwater's physical and chemical parameters had occurred. Groundwater quality parameters for the wells sampled during both GMEs were included in Appendix H of OTEK 2012. OTEK reported that samples were collected in laboratory-prepared sampling containers with the headspace minimised to reduce the potential for loss of volatile contaminants during transport and storage. The sampling methodologies employed were considered appropriate.

Samples from November 2009 were submitted to ALS (primary laboratory) and Labmark (secondary laboratory). Samples collected in December 2012 were submitted to ALS (primary) and Groundswell (secondary). Laboratory reports were NATA stamped and signed by a NATA signatory.

Based on available relevant guidelines and current industry practice, the groundwater characterisation works completed by OTEK were considered adequate for the purposes of assessing the groundwater quality beneath the site. In summary:

- The number of monitoring wells installed across the Overall Audit Area enabled groundwater flow direction to be inferred;

- The data from the Overall Audit Area allowed for an assessment of regional groundwater conditions and provided further indication on the groundwater quality beneath the site;
- The monitoring wells were placed appropriately to assess groundwater quality from potential sources;
- Wells were appropriately constructed, screened across the standing water level;
- The laboratory analytical suite and field measurements were adequate; and
- The low flow sampling methodology adopted was considered appropriate.

Auditor's Opinion on the Adequacy of the Groundwater Assessment Program

In summary, the monitoring wells were appropriately located down / cross gradient from potential sources, and were correctly constructed to allow assessment of contamination. An adequate number of sampling events were undertaken with an appropriate analytical suite to address all CoPC, given that soil and groundwater analytical results did not indicate contamination at levels considered to adversely impact the relevant beneficial uses, and no potential ongoing sources of groundwater contamination were identified within the site.

6.2 Beneficial uses of groundwater to be protected

The assessor's groundwater field investigations indicated the TDS of groundwater at the site ranged from 4660 mg/L (MW-8, November 2009) to 7100 mg/L (MW-7, December 2011. Therefore, groundwater at the site is classified as Segment C of the protected beneficial categories of the groundwater environment (*Groundwater SEPP*, 1997). Based on the salinity of the groundwater, the beneficial uses protected under the *Groundwater SEPP* were:

- Maintenance of Ecosystems;
- Stock watering;
- Industrial water use;
- Primary contact recreation (e.g. bathing, swimming); and
- Buildings and structures.

In addition to these beneficial uses, groundwater contamination should not be present at concentrations that would adversely affect the use of land at the site. Given that volatile contaminants were not encountered in groundwater at the site, it was not considered that groundwater conditions would have any adverse impact on the beneficial uses of land.

6.3 Regional Groundwater Quality

In order to gain a comprehensive understanding of regional groundwater quality, the auditor undertook a review of groundwater data across the Overall Audit Area (i.e. data from Areas 1, 2, 3 and 4). This review found that elevated concentrations of various inorganics in groundwater (e.g. boron, copper, manganese, nickel, selenium, zinc and nitrate) above the investigation levels (predominantly for maintenance of ecosystems) were widespread across the region.

Typical concentrations of inorganics, considered to be naturally occurring and/or regionally representative in groundwater across the Overall Audit Area are summarised in Table 20, and discussed further below. It was noted that much of these data were collected up to 10 years ago, but it was still considered valid to provide an overview of groundwater quality across the region.

Table 20 Regional groundwater quality

Analyte	Investigation Level Maintenance of Ecosystems[e]	Audit Area and Sampling Dates			
		Area 1 *March 2003*	Area 2 *October 2003*	Area 3 *May 2005 to Sept 2005 (three monitoring events)*	Area 4 *August 2007 – Dec 2011 (six monitoring events)*
		Concentration Range (mg/L)			
Boron	0.37	0.18-0.42	0.29-0.71	0.16-0.23	0.16-0.45
Copper	0.0014	<0.001-0.008	0.005-0.011	0.002-0.021	0.004-0.158[a]
Manganese	1.9	0.017-0.068	0.018-0.13	0.15-2.3	<0.001-0.861[c]
Nickel	0.011	<0.001-0.006	0.006-0.01	0.011-0.26	0.002-0.047
Selenium	0.011	0.028-0.051	0.038-0.072	<0.005-0.031	<0.01-<0.02
Zinc	0.008	0.015-0.019	0.009-0.014	0.01-0.047	0.01-0.331[b]
Nitrate-N	0.7	12.4[d]	5.3-6.7	2.3-9.8	1.25-5.82

Notes:
(a) isolated result in MW6 Area 4, November 2007, all other results for Area 4 wells ≤0.011 mg/L
(b) isolated result in MW6 Area 4, November 2007, all other results for Area 4 wells ≤0.066 mg/L
(c) Results from November 2009 for Manganese were an order of magnitude great than all other manganese results for Area 4, and considered anomalous
(d) converted from nitrate-NO_3 (55 mgL)
(e) ANZECC (2000), 95% level of protection (slightly to moderately disturbed ecosystems) for freshwater guidelines

Sources:
GHD 2003, GHD 2004, GHD 2008 (refer 8 References), OTEK 2010

Boron, copper, manganese, nickel, selenium and zinc

Detected concentrations of boron, copper, manganese, nickel, selenium and zinc were considered to be generally naturally occurring and representative of regional groundwater conditions in the Werribee Area, rather than attributed to point source contamination arising from historical uses of the Overall Audit Area. This was based on the following lines of evidence.

- Concentrations of inorganics were generally consistent across all audit Areas (i.e. Areas 1, 2, 3 and 4), in both up and down gradient monitoring wells;
- The concentrations of these analytes in soils were typically low, with few exceedances of soil investigation levels across the whole data set. In addition, the depth to groundwater, the low permeability of soils, and the low concentrations in groundwater indicated migration from surface soil concentrations is unlikely to have occurred to any significant extent across the Overall Audit Area;
- There were no specific point sources of these inorganics identified in the vicinity of the Overall Audit Area or the site itself;
- A review of nearby audits undertaken during the audit of Area 3 (GHD 2003) found that groundwater at two sites located approximately 5 km north east (Dames and Moore Pty Ltd, 2000, Statutory Environmental Audit, 200-208 Derrimut Road, Hoppers Crossing, Victoria) and 6 km north east (HLA Envirosciences Pty Ltd, 2002, Statutory Environmental Audit, 60 Warringa Crescent) of the Overall Audit Area contained concentrations of chromium, selenium, zinc, nickel and copper above the investigation levels. Based on all this information, the audit was of the opinion that these concentrations were considered naturally occurring in the Newer Volcanics Aquifer.

Nitrate

Similarly, groundwater in the vicinity of the Overall Audit Area was also found to contain "elevated" concentrations of nitrate, with concentrations in groundwater across all audit Areas (Areas 1, 2, 3 and 4) exceeding the maintenance of ecosystems guidelines. It was noted that ANZECC issued an errata in June 2005 stating that all nitrate trigger values should be deleted and replaced with "under review". Therefore the investigation level has been been retained for general guidance only. The concentrations of nitrate observed across the Overall Audit Area were considered either naturally occurring or representative of the regional land use, based on the following lines of evidence.

- Although potential point sources of nitrate were identified in the Overall Audit Area, including septic tanks and associated infrastructure located in Areas 4A, 4B, 4C, 4D, 4E4F/4I and 4G the distribution of nitrate concentrations in groundwater did not indicate contamination from point sources (i.e. no elevated concentrations of nitrate were detected close to potential sources). The concentrations of nitrate observed across the Overall Audit Area were reasonably consistent (refer Table 20 above), with up gradient (i.e. background) wells containing similar concentrations to wells in the vicinity and down gradient of potential sources.
- Concentrations of nitrate in soil across Area 4 were typically low (less than 20 mg/kg) even in soil validation samples taken from below potential sources, and were considered unlikely to migrate to groundwater given the low permeability of soils and depth to groundwater.
- Nitrate is known to be naturally occurring in the Newer Volcanics Aquifer at concentrations up to 60 mg/L (as nitrate, Leonard 1992). Furthermore, the widespread agricultural land use across the Werribee Area may have contributed, to an extent, to the nitrate concentrations (e.g. through fertilizer application and livestock).

Given these lines of evidence the concentrations of the abovementioned inorganics (including nitrate) observed across the Overall Audit Area, including the site, are considered to be regionally occurring and not derived from a site source.

Further discussion regarding specific analyte concentrations is provided in Section 6.4 below.

6.4 Summary of groundwater assessment results

The findings of the groundwater assessment undertaken at the site are summarised below. Tabulated groundwater results from 2009 and 2011 are presented in Tables 42 to 46 of OTEK 2012 (attached as Appendix C of this report). As noted in Section 3.4, OTEK adopted ANZECC 1992 investigation levels, despite the auditor requesting OTEK consider the more recent ANZECC 2000 guidelines. The following discussion is based on a comparison of groundwater analytical results with ANZECC 2000 and NHMRC 2008.

6.4.1 Organic analytes

Concentrations of BTEX, VOCs, PAHs and phenols in groundwater at the site were below the laboratory LORs.

Concentrations of TPH C_6-C_{36} in groundwater were below the LORs, with the exception of a single detection of TPH C_{15}-C_{28} in MW-8 (300 µg/L, November 2009). The detected concentrations of all TPH fractions in MW-8 were below the LOR in the subsequent monitoring event in December 2011. The auditor considered the result might have been attributed to the former UST located in Area 1 (up gradient of this well). However, given there were no hydrocarbons detected in soil samples, no hydrocarbons were detected in the most recent

round of sampling, and the likely source has been removed, the auditor did not consider there is any significant risk to beneficial users of groundwater.

6.4.2 Inorganic analytes

Concentrations of inorganics above the adopted investigation levels in groundwater at the site are summarised in Table 21 below.

Guidelines for industrial water use have not been included given that the relevant investigation levels would depend upon the broad potential application of this use. The beneficial use of buildings and structures was not considered to be adversely impacted by the elevated concentrations of inorganics and, therefore this beneficial use has not been presented in Table 20.

Table 21 Exceedances of adopted investigation levels (mg/L)

Adopted Investigation Level								
Beneficial Use		**Boron**	**Copper**	**Nickel**	**Zinc**	**Manganese**	**Selenium**	**Nitrate-N**
Maintenance of Ecosystems[1]		*0.37*	*0.0014*	*0.011*	*0.008*	*1.9*	*0.011*	*0.7*[8]
Primary Contact Recreation[2]		4[4]	2[4], 1[5]	0.02[4]	3[5]	0.5[4], 0.1[5]	0.01	50[4]
Stock watering[6]		**20**	**0.5**	**0.1**	**5**		**0.02**	
Sample Date	***Monitoring Well***	***Analytical Result***						
November 2009	MW-7		*0.003*	*0.031*	*0.018*			*2.69*
	MW-8	*0.43*	*0.004*	*0.027*	*0.009*	0.743	***0.042***[7]	*1.31*
December 2011	MW-7		*0.004*	*0.012*	*0.020*			*2.32*
	MW-8	*0.45*	*0.005*		*0.019*			*4.21*

NOTES:

Only results exceeding ILs are presented (if cell blank result was <IL)
Italicised results exceed ecosystem protection criteria.
Underlined results exceed stockwatering guidelines.
Bold results exceed protection of primary contact recreation.
NA - Not analysed
1. ANZECC (2000), 95% level of protection (slightly to moderately disturbed ecosystems) for freshwater guidelines.
2. NHMRC (2008); Guidelines for Managing Risks in Recreational Water.
3. Values range for various animals. Most conservative value for sheep selected.
4. Health Guideline.
5. Aesthetic Guideline.
6. ANZECC (2000) water quality trigger values (low risk) for heavy inorganics and metalloids in livestock drinking water
7. Concentration reported in field triplicate sample QS-1A. Primary sample concentration was below the investigation level.
8. ANZECC issued an errata in June 2005 stating that for nitrate: "*Delete all trigger values and replace with "Under review*". The investigation level has been retained for general guidance only.

A single result for manganese exceeded the investigation level for primary contact recreation in MW-8 in 2009, and a single concentration of selenium in 2009 (in a field triplicate sample only) exceeded the investigation level for all three relevant beneficial uses. Concentrations of boron, copper, nickel, zinc, and nitrate-N exceeded the ILs for maintenance of ecosystems in both wells, and concentrations of boron in MW-8 exceeded the maintenance of ecosystem IL. These exceedances are discussed further below.

Manganese

The concentration of manganese (0.009 mg/L) in groundwater from MW8 in 2011 was below all investigation levels, and several orders of magnitude lower than the 2009 concentration (0.743 mg/L). OTEK was not able to attribute the cause of the elevated concentration of manganese in the 2009 event. It was noted that unusually elevated manganese concentrations were also observed in other wells sampled across the Overall Audit Area during the same event. Therefore, OTEK considered the elevated manganese concentrations during the 2009 round (including in MW-8) to be anomalous, and unlikely to represent site conditions. OTEK also noted in its response to the auditor's query that the concentration may be the result of cross-contamination, but did not indicate the likely source (document reference *OTEK Response to GHD Comments 4A 02.11.12,* 2 November 2012).

The auditor agreed that the 2009 manganese concentration in MW8 was inconsistent with the findings across the Overall Audit Area for all other monitoring events and agreed that the manganese concentrations reported in the 2009 event were anomalous. It was noted that rinsate blank samples collected during the 2009 GME reported all concentrations below the LOR (including manganese), indicating that cross contamination having occurred during sampling was unlikely, particularly given the low concentrations of manganese in soil and other groundwater samples, and also given the absence of potentially contaminating source. A review of soil analytical data collected during the installation of MW-8 indicated elevated concentrations of manganese when compared with the remainder of the site. These concentrations were considered naturally occurring (refer Section 5).

Irrespective of the source of manganese, when accounting for the limited likely ingestion associated with primary contact recreation, the guidelines suggest the criteria be modified by a factor of 20 (NHMRC 2008). On this basis the concentration of manganese at MW-8 is below the modified investigation level. Additionally, the concentration detected in the subsequent monitoring event was well below all investigation levels, and was consistent with concentrations across the Overall Audit Area. It is, therefore not discussed as an exceedance henceforth.

Selenium

A single concentration of selenium was reported in a field triplicate sample (QS-1A, field triplicate of MW-8, November 2009) above the investigation levels for stock watering, maintenance of ecosystems and primary contact recreation. OTEK did not discuss this exceedence in the assessment report. The elevated concentration appeared to be an isolated result, with all other results for selenium in groundwater, including subsequent samples from MW-8, at or below all investigation levels (≤ 0.01 mg/L). The isolated elevated concentration was below the modified criteria for primary contact recreation (as discussed above), and hence this beneficial use was not considered precluded. It is, therefore not discussed as an exceedance henceforth.

Chloride, sodium, sulphate

In addition to the abovementioned inorganics, OTEK noted that concentrations of chloride, sodium and sulphate were identified above the criteria for recreational use in both monitoring wells. These analytes were not considered CoPC, rather were assessed to provide an indication of groundwater hydrochemistry. Additionally, all results were below the modified criteria (i.e. to account for limited ingestion of recreational waters). Accordingly the concentrations observed were not considered to have exceeded the investigation levels, were not likely to impact on the beneficial uses of groundwater; and have not been discussed henceforth.

Boron, Copper, Nickel, Zinc and Nitrate

OTEK provided a reasonable discussion regarding the concentrations of boron, copper, nickel, zinc and nitrate in Section 13.2 of OTEK 2012, concluding that these inorganics were naturally occurring. Based on the following lines of evidence, the auditor concurs with OTEK's conclusion, which was discussed in Section 6.4 above.

- The general absence of elevated levels of these inorganics in soil sampled from the site, with the exception of manganese and nickel, which were detected in soil above the investigation levels for maintenance of ecosystems, but are considered to be representative of regional conditions (as discussed in 5.2.1);
- There were no specific widespread sources of boron, copper, manganese, nickel, selenium or zinc identified at the site, suggesting concentrations of these analytes are most likely to be naturally occurring and within the range of natural background variation;
- Boron was not analysed in soil samples collected from MW-8, therefore it is not possible to assess whether migration from soil had occurred. However, all boron concentrations in soil samples collected from grid locations across the site were below the LOR. In addition, boron is not a common contaminant of concern associated with fuel storage (i.e. the UST in Area 1), no other potential sources of boron were identified, and due to the nature of the site soil (i.e. generally clayey), it was expected that the soil would have high cation exchange capacity (CEC) and hence the soil was likely to slow migration of boron to groundwater due to this high adsorption capacity. On this basis, and given the broad range of boron concentrations detected in groundwater across the Overall Audit Area, it was considered the boron concentrations at MW-8 are likely naturally occurring;
- A review of data for wells in adjacent Area (i.e. Area 1 to the east, Area 2 to the south Area 4 to the north and east) against the data reported for the site indicated that concentrations of boron, copper, nickel, selenium, zinc and nitrate at the site were within the range of concentrations detected in the Overall Audit Area (data from Area 4 summarised in Table O of OTEK 2012);
- Although historical agricultural use of the land and the historical presence of a septic tank/soak pit could have been a potential source of nitrate contamination, concentrations in groundwater were consistent with those detected across the Overall Audit Area (summarised in Table K of OTEK 2012). Additionally, concentrations of nitrate in soil, including those analysed beneath the only suspected point source on site (i.e. the septic/soak pit) were low (refer Section 5.3);

  Nitrate is known to be naturally occurring in the Newer Volcanics Aquifer, up to concentrations of approximately 60 mg/L (Leonard, 2006), and is ubiquitous in urban areas (residential areas are located to the west and east of the Overall Audit Area). The historical agricultural uses across the wider Werribee region may also be a contributing factor. The concentrations observed were considered to be representative of regional conditions, and not attributed to the site;
- Sources or activities undertaken at the site were not expected to be associated with the elevated inorganic concentrations reported suggesting that the inorganics at the site were not from an onsite anthropogenic source;
- The generally low permeability clayey site soil developed over basaltic/volcanic geology is likely to affect the fate and behaviour of contaminants (i.e. retard movement of contaminants through soil and minimise infiltration into the aquifer). Such soils are usually known to be able to adsorb higher concentrations than lighter soils (e.g. sandy soils) as they have higher cation exchange capacity and hence higher inorganics assimilation capacity; and

- The depth to the groundwater is considerable and hence it is expected to reduce migration of inorganics.

Based on the discussion above and in accordance with the Groundwater SEPP (part IV, 10, 2(c)), where “the background level of a groundwater quality indicator is greater than the objective, the background level becomes the objective”. Therefore, concentrations of boron, copper, nickel, zinc and nitrate-N were not considered to exceed the environmental objectives and are not discussed as exceedances within the remainder of this report.

Furthermore, the groundwater results were consistent with the soil results and field observations that had already demonstrated the potential sources of impact, including the former UST located in Area 1, the septic/soak pit and workshop had not resulted in an adverse impacts to groundwater.

6.4.3 Aesthetic impacts

There was no sheen or odour observed in groundwater from any of the wells.

6.4.4 Off-site migration of groundwater contamination

Groundwater was not considered to be polluted and therefore offsite migration of groundwater was not considered an issue of concern.

6.5 Summary of groundwater conditions and impact on beneficial uses

Results of the groundwater assessment program indicated groundwater was not polluted and that detected concentrations of boron, copper, nickel, zinc, and nitrate were naturally occurring. Therefore, potential or existing beneficial uses were not adversely impacted by a site source. The relevance of protected beneficial uses at the site and the potential for an adverse impact of the groundwater conditions on the relevant beneficial uses is summarised in Table 22 below.

Table 22 Likelihood of beneficial uses being realised

Protected Segment C Beneficial Uses	Existing Use?	Likelihood/ Relevance of Beneficial Use	Analytes	Comments
Maintenance of ecosystems	Yes	The groundwater is likely to discharge to the Werribee River and/or Port Phillip Bay, located approximately 1 km to the east and 7 km to the south east of the site respectively.	boron, copper, nickel, selenium, zinc, and nitrate.	Maintenance of ecosystem not precluded, given that concentrations of boron, copper, nickel, selenium, zinc and nitrate were considered naturally occurring in the region as discussed in this report.
Stock watering	Unlikely	It is possible, given the current rural setting that stock watering may be realised on neighbouring properties in the future. However, the proposed urban development, lot size, and access to a reticulated water system make this unlikely.	selenium	Beneficial use was not precluded, given that concentrations of selenium were considered naturally occurring in the region as discussed in this report.

Protected Segment C Beneficial Uses	Existing Use?	Likelihood/ Relevance of Beneficial Use	Analytes	Comments
Primary contact recreation	Unlikely	Not relevant on site, however, groundwater wells may be used to fill or top up swimming pools in the vicinity of the site. However, this was considered unlikely given access to a reticulated water system.	Manganese and selenium	Beneficial use was not precluded, given that concentrations of manganese and selenium below modified criteria, and were considered anomalous as discussed in this report.
Industrial use	No	Criteria are usually industry specific, however, given neutral pH and low TDS groundwater could support a number of industries.	NA	Use of groundwater for this beneficial use was considered unlikely given proposed development.
Buildings and structures	No	When assessing the groundwater with respect to this beneficial use the groundwater results were compared with the requirements set in Australian Standard AS2159:1995 (Piling – Design and Installation). The pH results indicated that the groundwater was not aggressive. It was considered that buildings and structures would not come in to contact with the groundwater.	N/A	Beneficial use not precluded given that concentrations do not indicate potentially corrosive conditions to buildings and structures. It was also not considered that such beneficial use was likely as the depth of any foundation is unlikely to come into contact with groundwater.

6.6 Conclusion on groundwater quality, existing and likely future uses

As discussed above, the relevant beneficial uses of maintenance of ecosystems, stock watering, industrial water use, primary contact recreation (e.g. bathing, swimming), and buildings and structures were not precluded by the concentrations of any contaminant tested that were attributed to the site (i.e. not naturally occurring). Therefore, groundwater at the site was not considered to have adversely impacted on-site or off-site current or future uses.

Auditors Opinion on the Groundwater Conditions and Impact to Beneficial Uses

Based on all the information available and as per the multiple lines of evidence provided above, the auditor was of the opinion that onsite sources and activities, including the former septic/soak pit, workshop and general agricultural use have not impacted any beneficial uses of groundwater. This was further supported by the absence of elevated concentrations of concern in soil, and observations made during field works (e.g. no visible staining or odours).

Concentrations of boron, copper, nickel, manganese, selenium, zinc, and nitrate were reported above the adopted investigation levels for the beneficial uses maintenance of ecosystems and/or stock watering. However, the concentrations of these inorganics were considered naturally occurring, and were not considered to have impacted any beneficial use of groundwater at the site (refer discussions through Section 6.4 above).

7. Audit Conclusions

Following completion of this environmental audit for Area 4A of Riverwalk Estate, Princes Highway, Werribee, Victoria and based on all the data available to the auditor at the time of the completion of the ESA and other remediation and validation works, as detailed and discussed in this report, the following conclusions are provided:

- The overall QA/QC activities undertaken by the assessor indicated that the analytical results of the soils and groundwater were representative of site conditions and could be relied on to reach the opinions stated in this audit report at the time of assessments (refer to Section 4.1 and Appendix E for details). It was noted the auditor had to provide numerous reviews and comments to OTEK in order to obtain a report of suitable quality.
- The density and distribution of sampling exceed and were in general accordance with AS4482.1 requirements and identified former potential sources and activities, which were appropriately targeted. The sampling program was considered acceptable (refer to Sections 5.1 and 5.2 for details).
- Based on the data available up to the completion of the audit, several concentrations of barium, manganese, nickel, and vanadium were observed in soils across the site. These concentrations were considered to be naturally occurring, and were not considered to impact the future use of the site (refer to Sections 5.2 to 5.5 for details).
- Groundwater was not considered polluted at the site. The elevated concentrations of boron, copper, nickel, manganese, selenium, zinc, and nitrate detected were considered to be naturally occurring and as such were not considered to impact relevant beneficial uses (refer to Sections 6.3 and 6.4 for details).
- At the time of completion of this audit, the site surface had areas covered with grass, asphalt car park and roadways and a dry pond. They are described in this report and shown on Figure 3. The auditor confirmed the site appearance during his final site inspection on 21 February 2013.
- The conditions of soil and groundwater were not expected to adversely impact off-site uses.

The auditor is therefore of the opinion that the site is suitable for Parks and Reserves; Agricultural; Sensitive use (i.e. high density, medium and single dwelling/low density residential use, child care centre, pre-school or primary school); Recreation/Open space; Commercial; and Industrial. In accordance with the Environment Protection Act 1970 and the appropriate policies and guidelines issued by the EPA, a Statement of Environmental Audit has been issued as part of this report.

These conclusions must be read in conjunction with the full environmental audit report, *Melbourne Water Corporation, Area 4A of Riverwalk Estate, Princes Highway, Werribee, Victoria, March 2013.*

DATED: 14 March 2013

SIGNED: .....

Dr FOUAD ABO
ENVIRONMENTAL AUDITOR
(Appointed pursuant to the Environment Protection Act 1970)

8. References

ANZECC/NHMRC 1992, *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites,* Australian and New Zealand Environment and Conservation Council & National Health and Medical Research Council.

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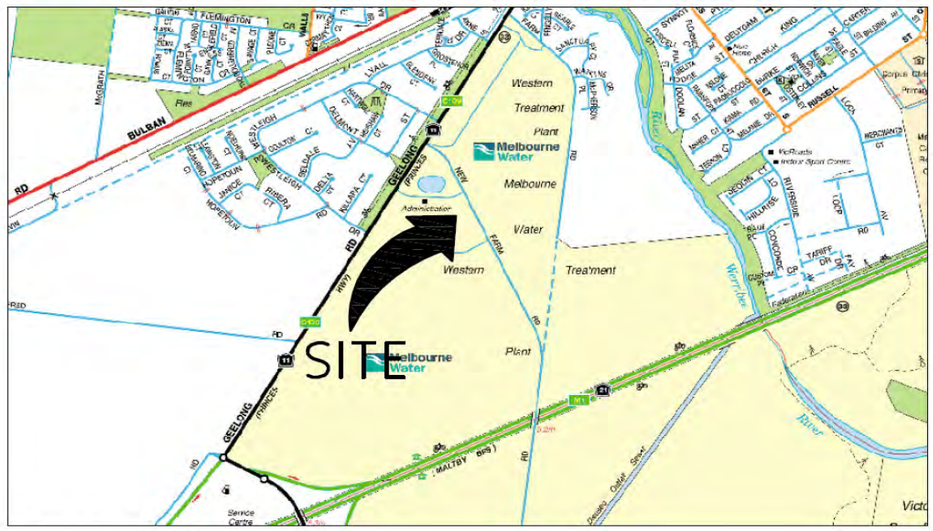
Figures

REGIONAL MAP

NOT TO SCALE



LOCALITY MAP

METRES

0 100 200 300 400 500 1000

APPROXIMATE SCALE ONLY

VICINITY MAP

METRES

0 50 100 150 300m

APPROXIMATE SCALE ONLY

Client: Melbourne Water

Project: Environmental Audit of Area 4A, Riverwalk Estate, Princes Highway, Werribee

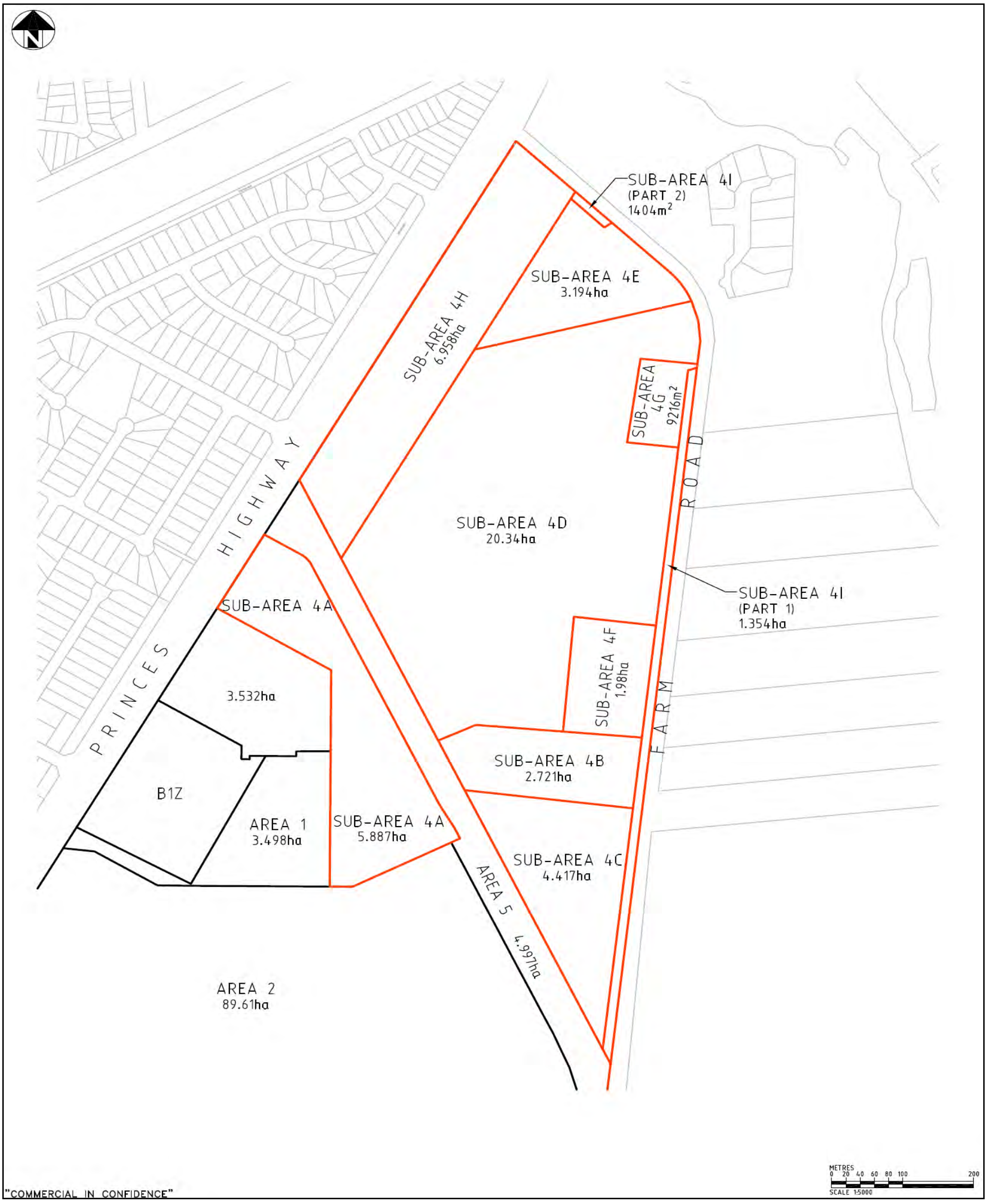
Source: OTEK 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria*

scale: | as shown | date: | 20 February 2013

Job No. | 31/1157500
Report No. | 216943
Rev No. | A

Figure 1
Regional & Vicinity Maps

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au

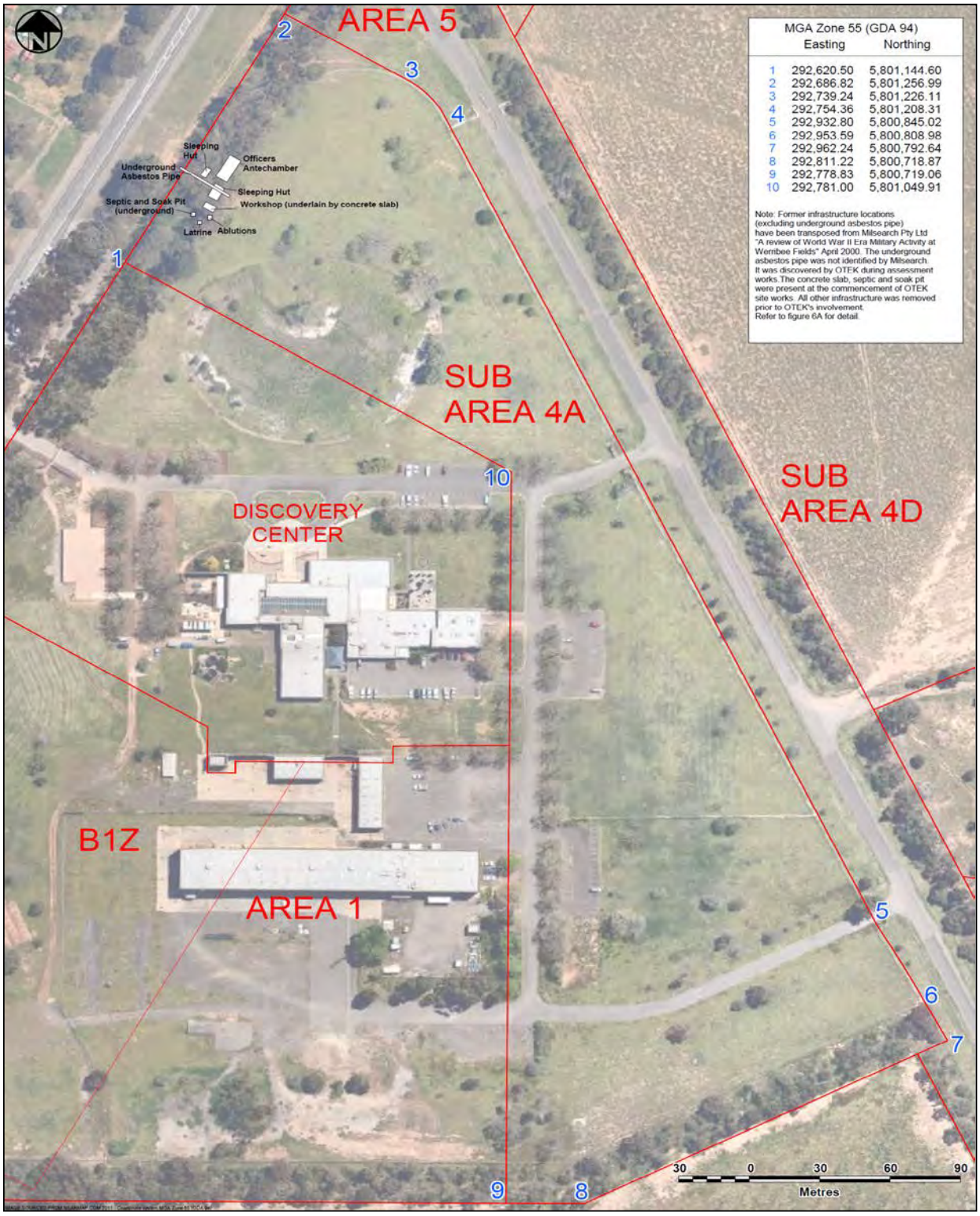


Client: Melbourne Water
Project: Environmental Audit of Area 4A, Riverwalk Estate, Princes Highway, Werribee
Source: OTEK 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria*
scale: | as shown | date: | 20 February 2013

Job No. | 31/1157500
Report No. | 216943
Rev No. | A

Figure 2
Riverwalk Estate Areas 1,2 & 4 (Overall Audit Area)

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au

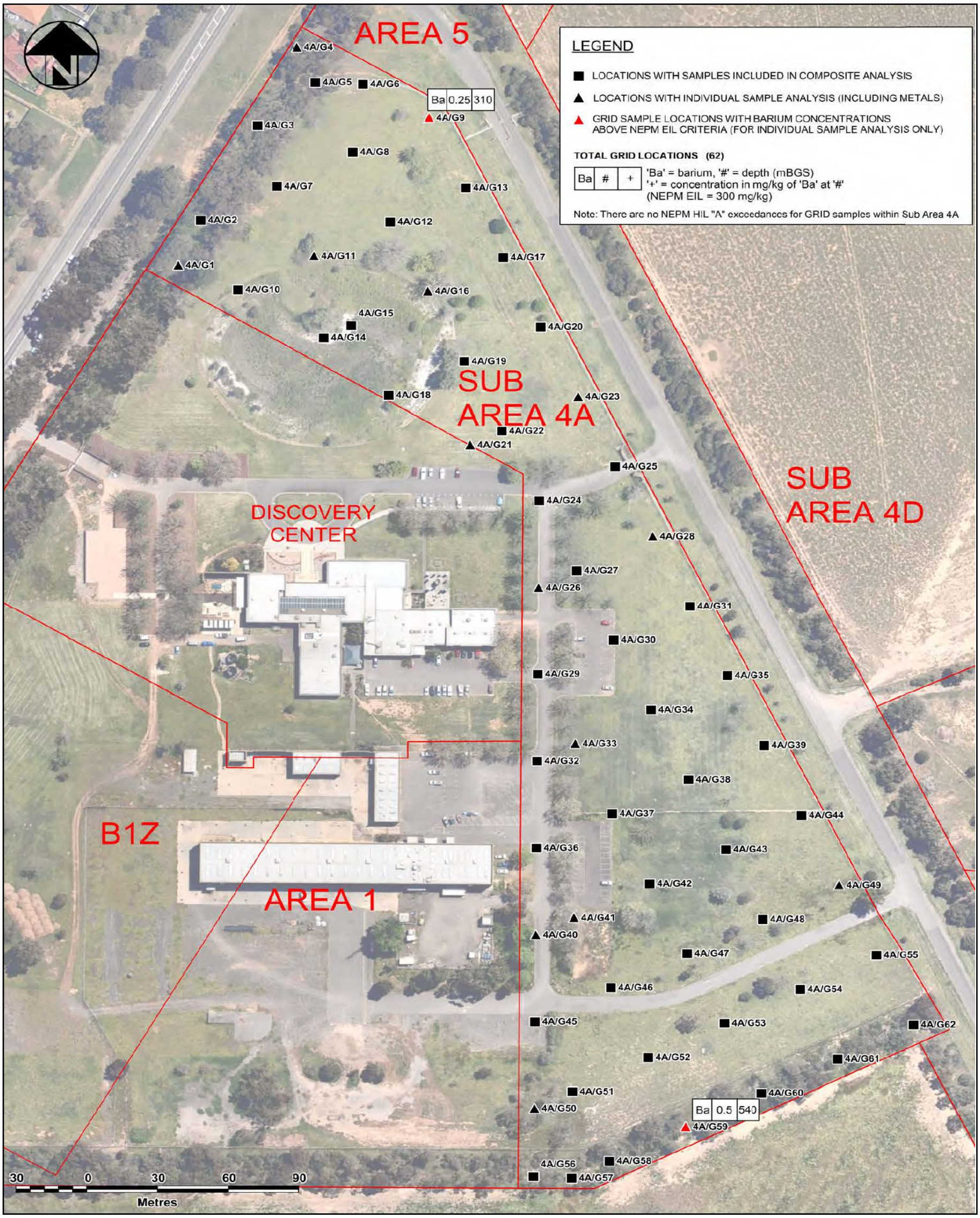


Client: Melbourne Water
Project: Environmental Audit of Area 4A, Riverwalk Estate, Princes Highway, Werribee
Source: OTEK 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria*
scale: | as shown | date: | 20 February 2013

Job No. | 31/1157500
Report No. | 216943
Rev No. | A

Figure 3
Defined Audit Boundary and RAAF Infrastructure Locations

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au



Client: Melbourne Water
Project: Environmental Audit of Area 4A, Riverwalk Estate, Princes Highway, Werribee
Source: OTEK 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria*
scale: | as shown | date: | 21 April 2011

Job No. | 31/1157500
Report No. | 216943
Rev No. | A

Figure 4
Area 4A Grid Soil Sampling Locations

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au

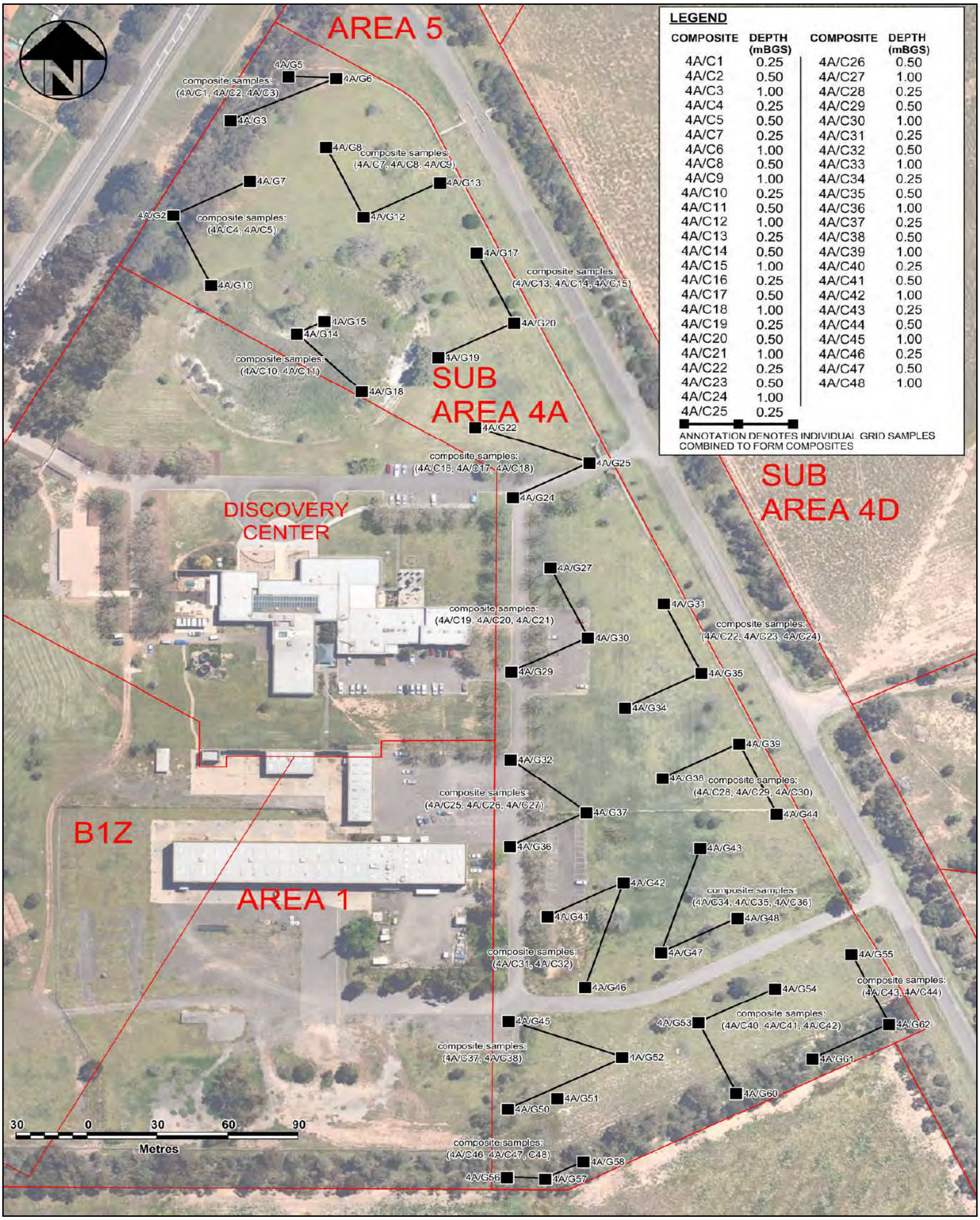


Figure 5
Area 4A Composite Soil Sampling Locations

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au

Client: Melbourne Water

Project: Environmental Audit of Area 4A, Riverwalk Estate, Princes Highway, Werribee

Source: OTEK 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria*

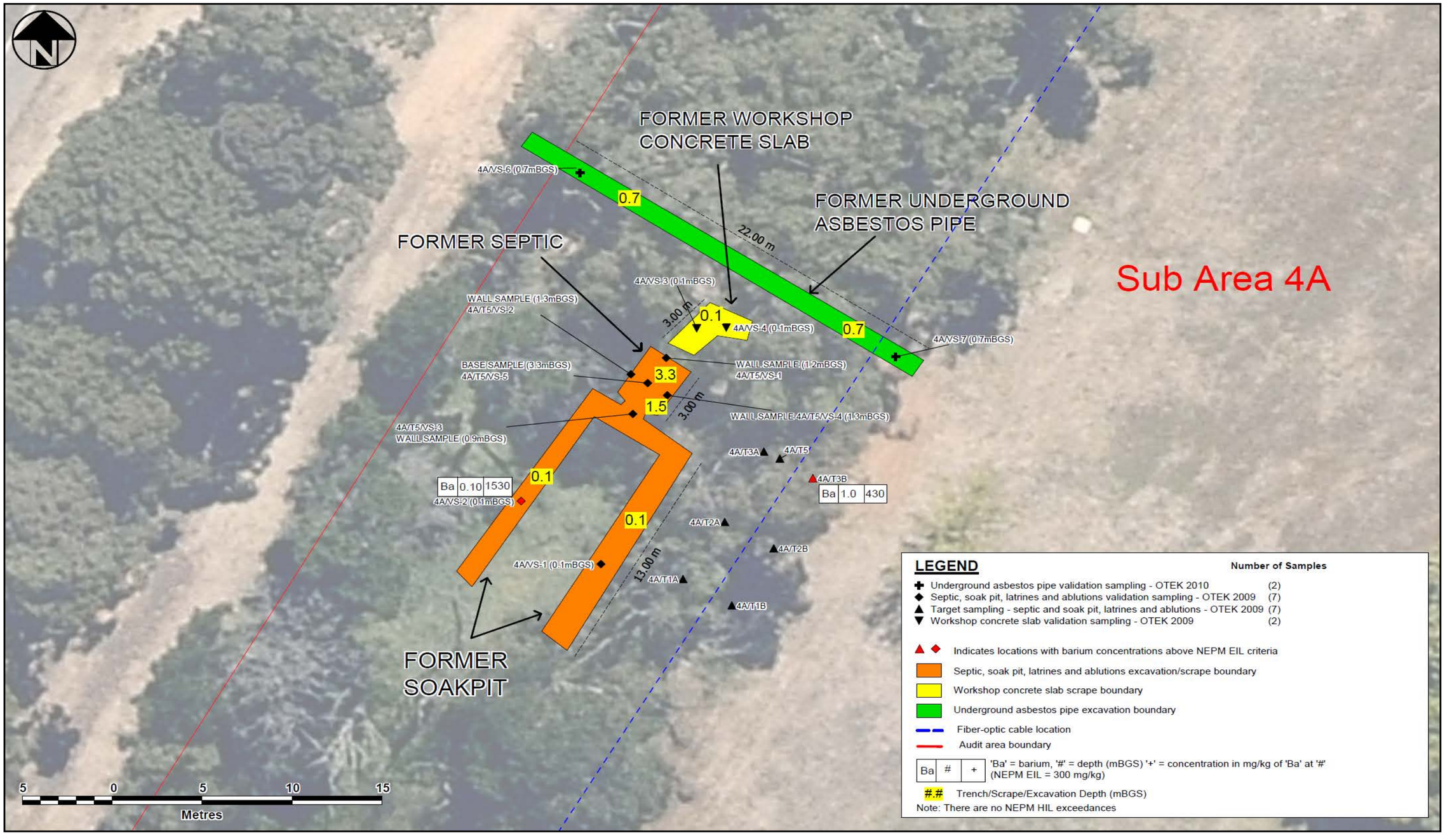
scale: | as shown date: | 20 February 2013

Job No. | 31/1157500
Report No. | 216943
Rev No. | A

Figure 6

Infrastructure Excavation Areas and Pond Soil Profile Investigation

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au



Client: Melbourne Water

Project: Environmental Audit of Area 4A, Riverwalk Estate, Princes Highway, Werribee

Source: OTEK 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria*

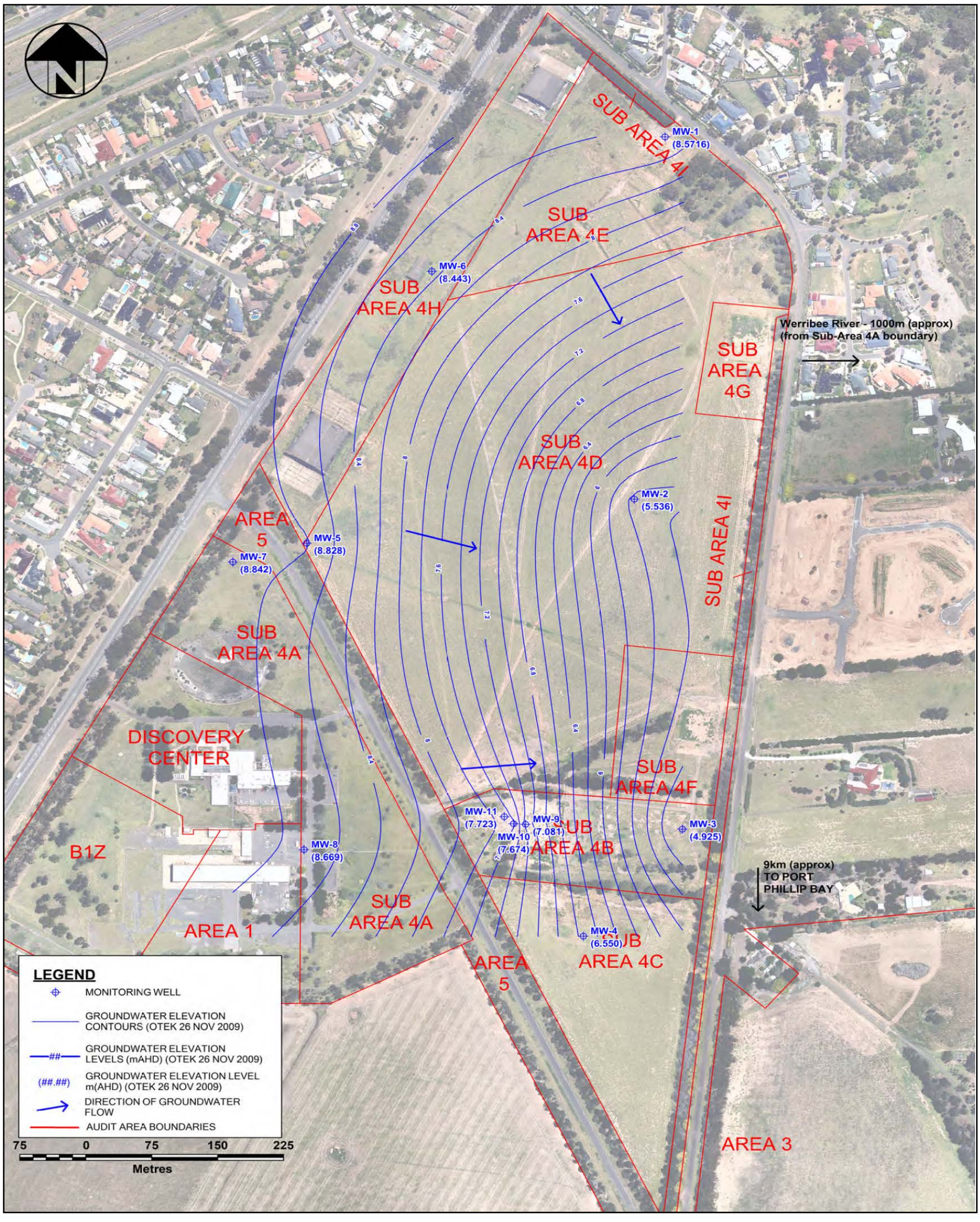
scale: as shown | date: 31 October 2012

Job No. 31/1157500
Report No. 216943
Rev No. A

Figure 7

Infrastructure Target Sampling Locations, Excavation Areas and Validation Sampling Locations

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au



Client: Melbourne Water

Project: Environmental Audit of Area 4A, Riverwalk Estate, Princes Highway, Werribee

Source: OTEK 2012, *Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria*

scale: | as shown | date: | 20 February 2013

Job No. | 31/1157500
Report No. | 216943
Rev No. | A

Figure 8
Area 4 Groundwater Contour Map

Level 8, 180 Lonsdale Street, Melbourne VIC 3000 T 61 3 8687 8000 F 61 3 8687 8111 E melmail@ghd.com.au

Appendices

Appendix A – Certificate of Title

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 11367 FOLIO 778 Security no : 124043522685M
Produced 17/10/2012 04:20 pm

LAND DESCRIPTION

Lot B on Plan of Subdivision 636839Q.
PARENT TITLE Volume 11309 Folio 105
Created by instrument PS636839Q 02/08/2012

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
MELBOURNE WATER CORPORATION of 990 LA TROBE STREET DOCKLANDS VIC 3008
PS636839Q 02/08/2012

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

NOTICE as to part Section 47(2) Heritage Act 1995
REGISTER NO. 1884
X234908X 29/12/2000

AGREEMENT Section 173 Planning and Environment Act 1987
AG017913K 08/08/2008

DIAGRAM LOCATION

SEE PS636839Q FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER		STATUS	DATE
PS636839Q (S)	PLAN OF SUBDIVISION	Registered	02/08/2012

DOCUMENT END

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO	LRS USE ONLY	PLAN NUMBER
———	EDITION 1	PS 636839Q

LOCATION OF LAND

PARISH: MAMBOURIN
TOWNSHIP: WERRIBEE
CROWN ALLOTMENTS: 22A (PART) & 10A (PART)

PARISH: MAMBOURIN
CROWN ALLOTMENTS: 4A, 5A, 6A, 7A, 8A & 9A
CROWN ALLOTMENTS: G (PT) & H (PT) SECTION 7
CROWN ALLOTMENT: 7 (PT) & 8 (PT) SECTION 8

LAST PLAN REF: PS 641301K LOT A
TITLE REFERENCE: VOL 11309 FOL 105

POSTAL ADDRESS: CNR PRINCES HIGHWAY & MALTBY BYPASS
WERRIBEE 3030

MGA CO-ORDINATES: E 292 680
OF APPROX. CENTRE N 5 800 580
OF LAND IN PLAN ZONE 55

VESTING OF ROADS OR RESERVES

IDENTIFIER	COUNCIL/BODY/PERSON
R1 (ROAD)	WYNDHAM CITY COUNCIL
RESERVE No.1	POWERCOR AUSTRALIA LTD

COUNCIL CERTIFICATION AND ENDORSEMENT

COUNCIL NAME: WYNDHAM CITY COUNCIL REF:

(1) THIS PLAN IS CERTIFIED UNDER SECTION 6 OF THE SUBDIVISION ACT 1988.

(2) THIS PLAN IS CERTIFIED UNDER SEC. 11(7) OF THE SUBDIVISION ACT 1988.
DATE OF ORIGINAL CERTIFICATION UNDER SECTION 6 / /

(3) THIS IS A STATEMENT OF COMPLIANCE ISSUED UNDER SECTION 21 OF THE SUBDIVISION ACT 1988

OPEN SPACE:

(A) A REQUIREMENT FOR PUBLIC OPEN SPACE UNDER SECTION 18 OF THE SUBDIVISION ACT 1988 HAS NOT BEEN MADE

(B) THE REQUIREMENT HAS BEEN SATISFIED

(C) THE REQUIREMENT IS TO BE SATISFIED IN STAGE:

COUNCIL DELEGATE
COUNCIL SEAL
SURVEYOR'S PLAN VERSION
DATE / /

RE-CERTIFIED UNDER SECTION 11(7) OF THE SUBDIVISION ACT 1988
COUNCIL DELEGATE
COUNCIL SEAL
SURVEYOR'S PLAN VERSION
DATE / /

NOTATIONS

DEPTH LIMITATION:
DOES NOT APPLY

THIS IS A SPEAR PLAN

STAGING:
THIS IS NOT A STAGED SUBDIVISION
PLANNING PERMIT NO: WYP4474/10

SURVEY:
THIS PLAN IS BASED ON SURVEY (PS 636838S)
THIS SURVEY HAS BEEN CONNECTED TO PERMANENT MARKS:
IN PROCLAIMED SURVEY AREA NUMBER:

OTHER PURPOSE OF PLAN:
TO REMOVE PART OF EASEMENT E-6 ON PS 641301K AND CREATED IN PS 636838S AND AFFECTING ROAD R1 ON THIS PLAN.

GROUNDS FOR EASEMENT REMOVAL:
WYNDHAM CITY COUNCIL
PLANNING PERMIT No. WYP4613/10

LOTS 1 TO 117 (BOTH INCLUSIVE) & LOT A HAVE BEEN OMITTED FROM THIS PLAN

RIVERWALK RELEASE 2

EASEMENT INFORMATION

LEGEND: A - APPURTENANT EASEMENT E - ENCUMBERING EASEMENT R - ENCUMBERING EASEMENT (ROAD)

EASEMENT REFERENCE	PURPOSE	WIDTH (METRES)	ORIGIN	LAND BENEFITED/IN FAVOUR OF
			SEE SHEET 2	

LRS USE ONLY

STATEMENT OF COMPLIANCE
EXEMPTION STATEMENT
RECEIVED ☑
DATE 23/07/12

LRS USE ONLY

PLAN REGISTERED
TIME 11:17am
DATE 2/08/12
G Venn
ASSISTANT REGISTRAR OF TITLES

SHEET 1 OF 12 SHEETS

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE: DIGITALLY SIGNED

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO ——

PLAN NUMBER **PS 636839Q**

EASEMENT INFORMATION

LEGEND: A - APPURTENANT EASEMENT E - ENCUMBERING EASEMENT R - ENCUMBERING EASEMENT (ROAD)

EASEMENT REFERENCE	PURPOSE	WIDTH (METRES)	ORIGIN	LAND BENEFITED/IN FAVOUR OF
E-1	SEWERAGE	3	PS412756U	CITY WEST WATER LIMITED
E-2	SEWERAGE	2.50	PS636838S	CITY WEST WATER LIMITED
E-3	DRAINAGE	3	PS641301K	WYNDHAM CITY COUNCIL
	SEWERAGE	3	PS641301K	CITY WEST WATER LIMITED
E-4	SEWERAGE	2	PS641301K	CITY WEST WATER LIMITED
E-5	DRAINAGE	2	PS641301K	WYNDHAM CITY COUNCIL
E-6	DRAINAGE	SEE PLAN	PS636838S	WYNDHAM CITY COUNCIL
	SEWERAGE	SEE PLAN	PS636838S	CITY WEST WATER LIMITED
E-7	DRAINAGE	SEE PLAN	PS636838S	WYNDHAM CITY COUNCIL
E-8	SEWERAGE	2	PS636838S	CITY WEST WATER LIMITED
E-9	DRAINAGE	2	PS636838S	WYNDHAM CITY COUNCIL
E-10	POWERLINE	SEE PLAN	PS636838S - SEC 88 ELECTRICITY INDUSTRY ACT 2000	POWERCOR AUSTRALIA LTD
E-11	DRAINAGE	2	THIS PLAN	WYNDHAM CITY COUNCIL
E-12	SEWERAGE	2	THIS PLAN	CITY WEST WATER LIMITED
E-13	DRAINAGE	3	THIS PLAN	WYNDHAM CITY COUNCIL
	SEWERAGE	3	THIS PLAN	CITY WEST WATER LIMITED
E-14	DRAINAGE	SEE PLAN	PS636838S	MELBOURNE WATER CORPORATION
E-15	SEWERAGE	2.50	PS636838S	CITY WEST WATER LIMITED
	DRAINAGE	2.50	PS636838S	MELBOURNE WATER CORPORATION
E-16	DRAINAGE	4	THIS PLAN	WYNDHAM CITY COUNCIL
E-17	SEWERAGE	2	THIS PLAN	CITY WEST WATER LIMITED
E-18	DRAINAGE	SEE PLAN	THIS PLAN	WYNDHAM CITY COUNCIL
	SEWERAGE	SEE PLAN	THIS PLAN	CITY WEST WATER LIMITED
E-19	DRAINAGE	SEE PLAN	PS636838S	MELBOURNE WATER CORPORATION
	SEWERAGE	SEE PLAN	THIS PLAN	CITY WEST WATER LIMITED
E-20	POWERLINE	1.50	THIS PLAN - SEC 88 ELECTRICITY INDUSTRY ACT 2000	POWERCOR AUSTRALIA LTD

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 2

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

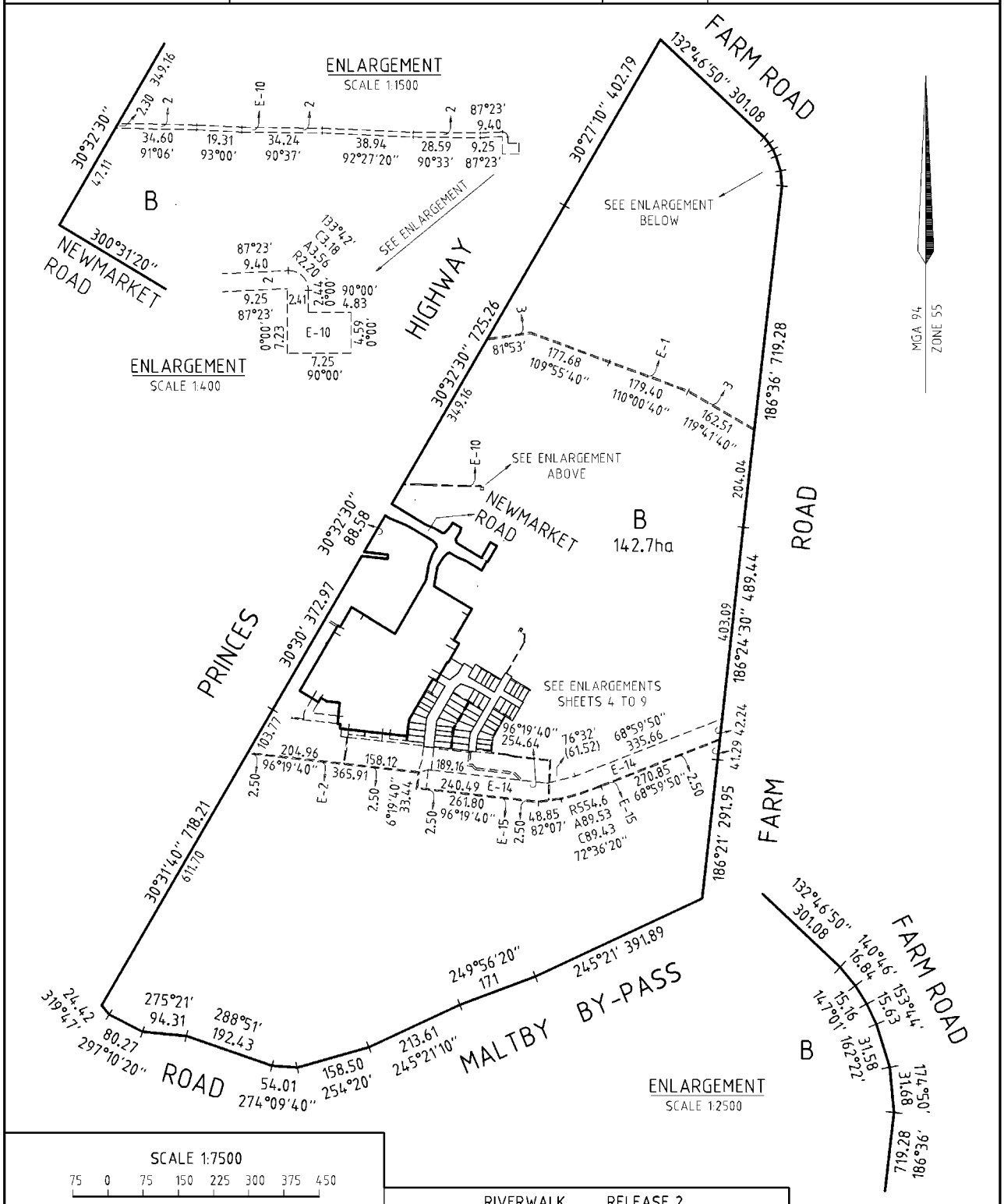
Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO: ——

PLAN NUMBER: PS 636839Q



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LENGTHS ARE IN METRES

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 3

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
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Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

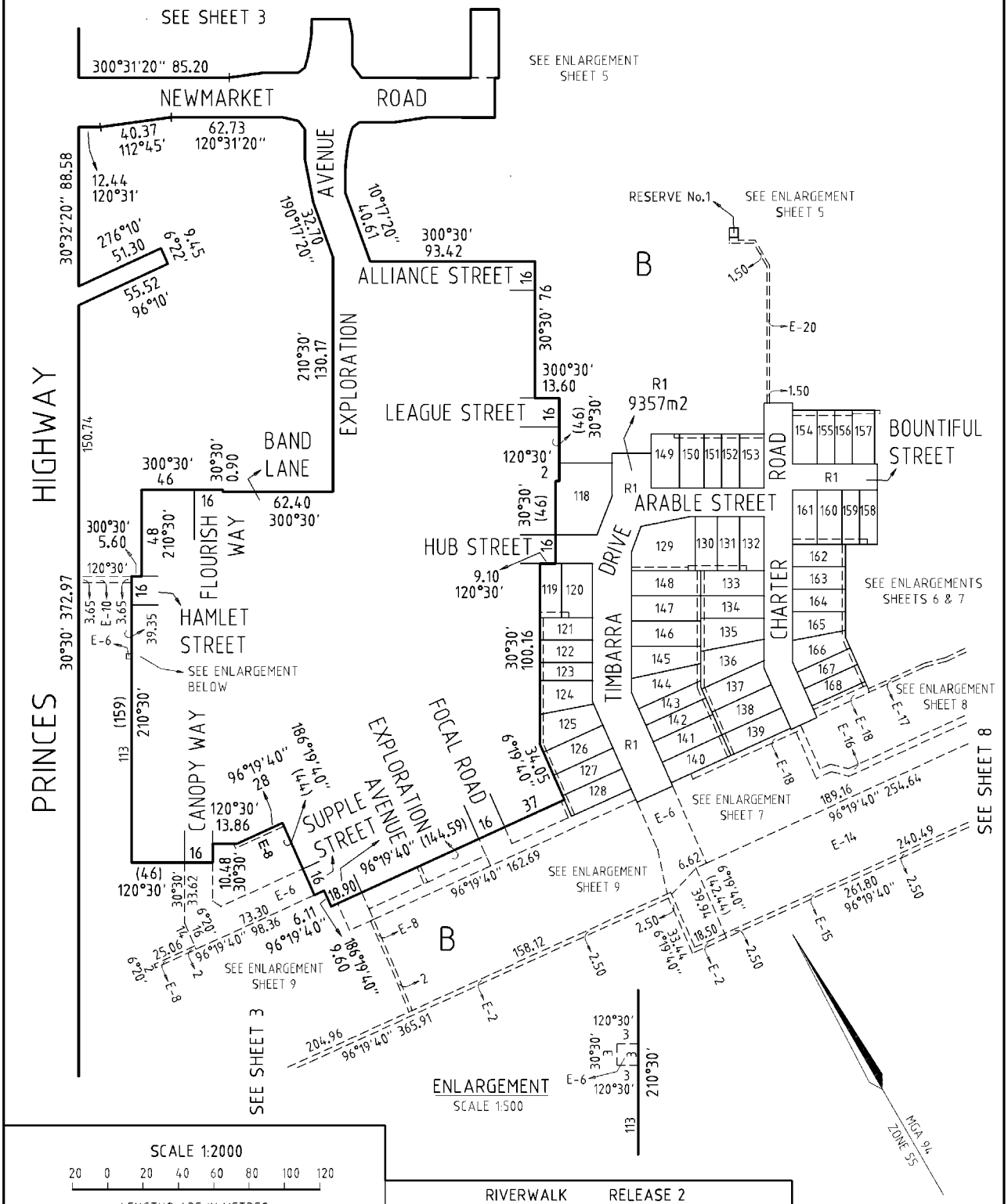
ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



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LENGTHS ARE IN METRES

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 4

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

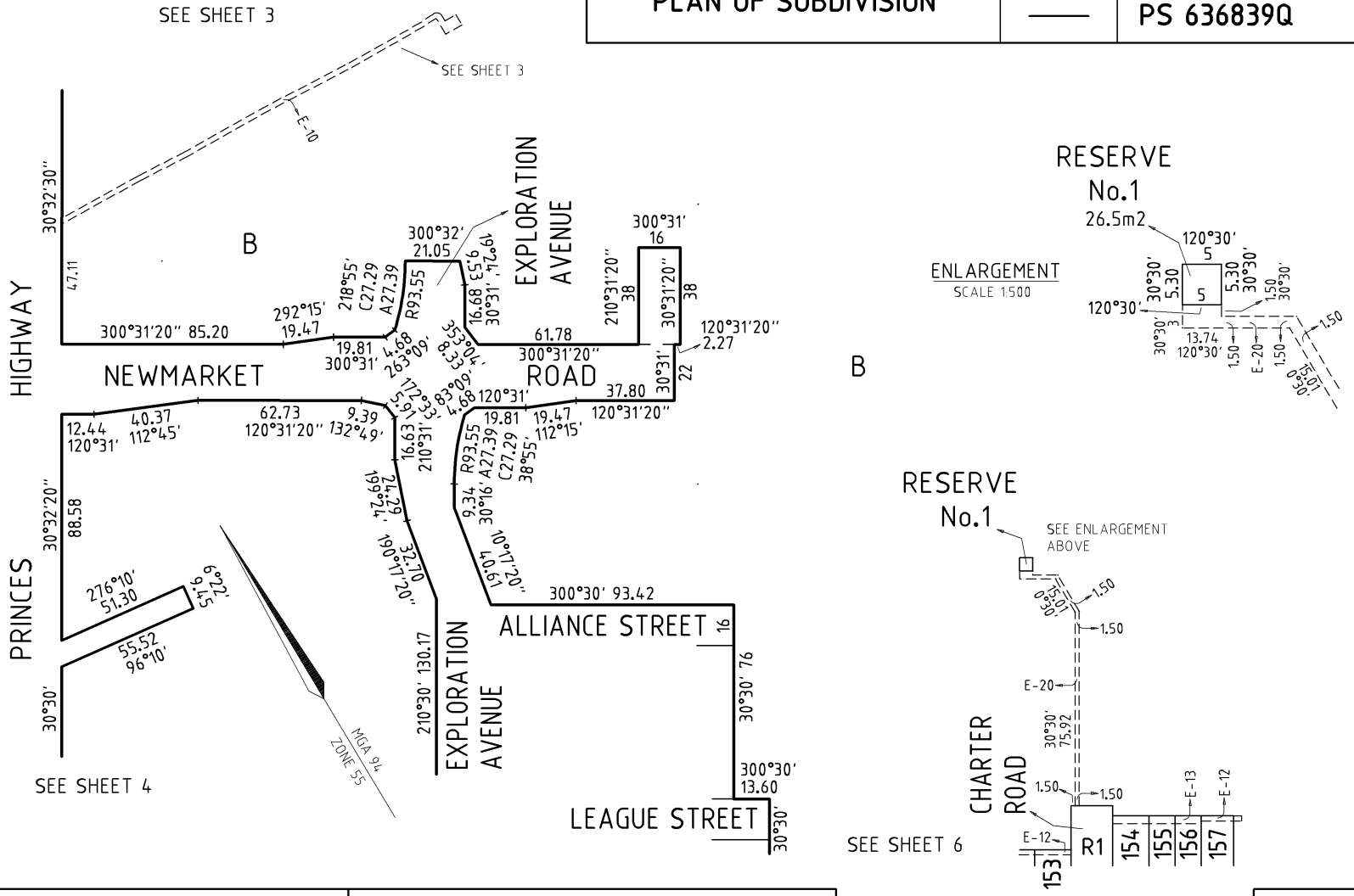
..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2	No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha	SHEET 5

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:1500
15 0 15 30 45 60 75 90
LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN
SIGNATURE ..... DATE / /
REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /
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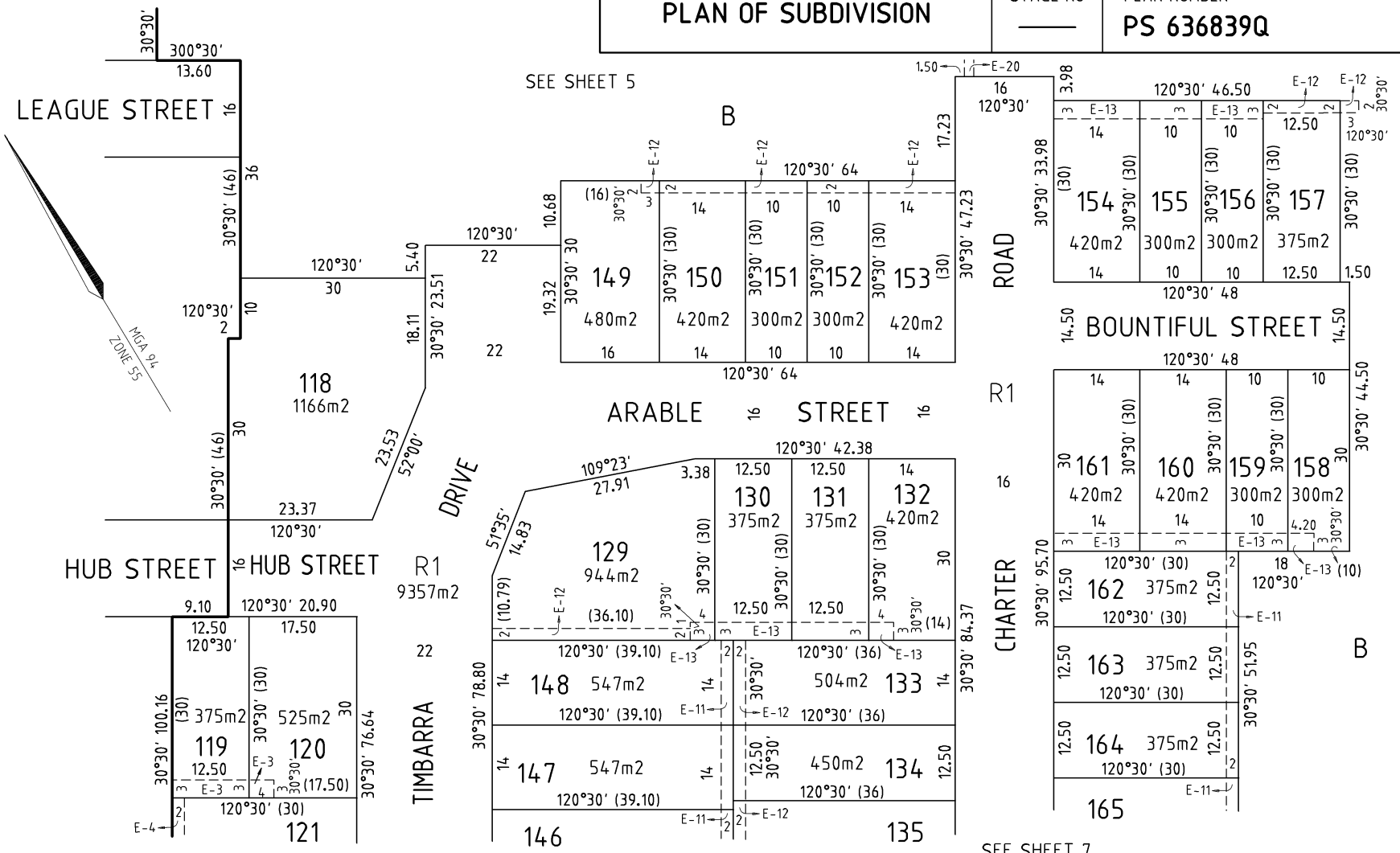
PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 6

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

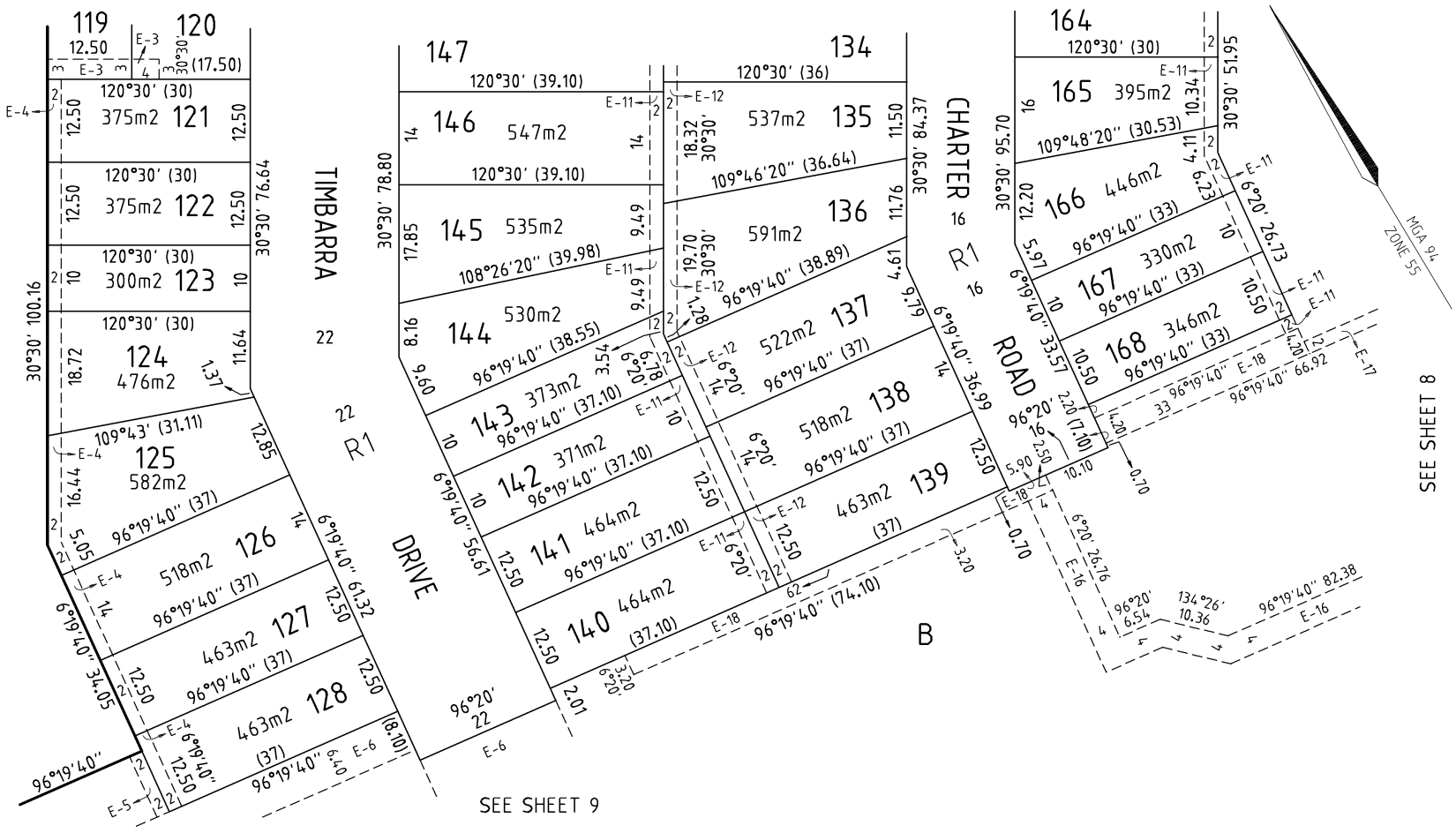
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 7

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

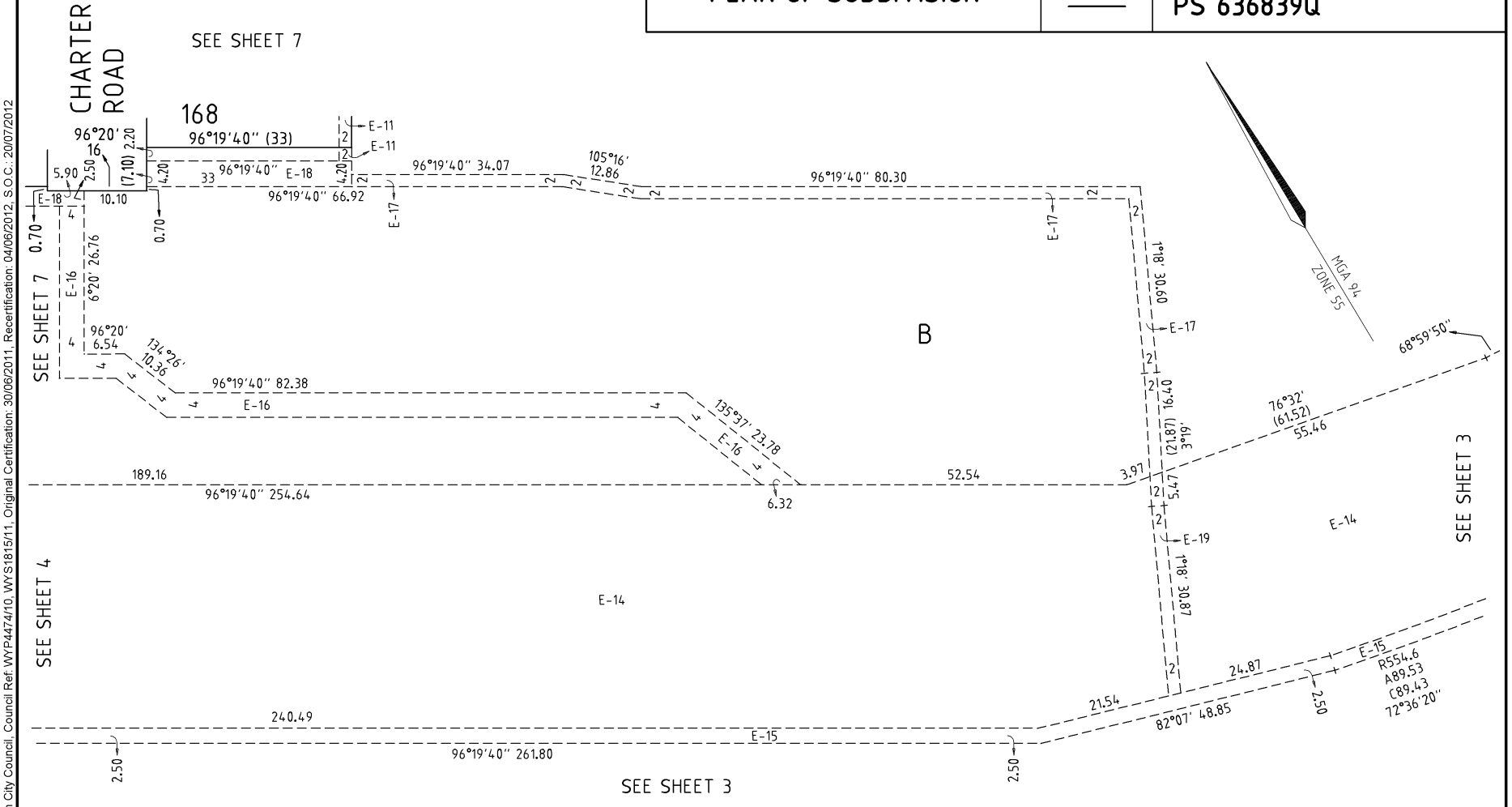
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 8

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

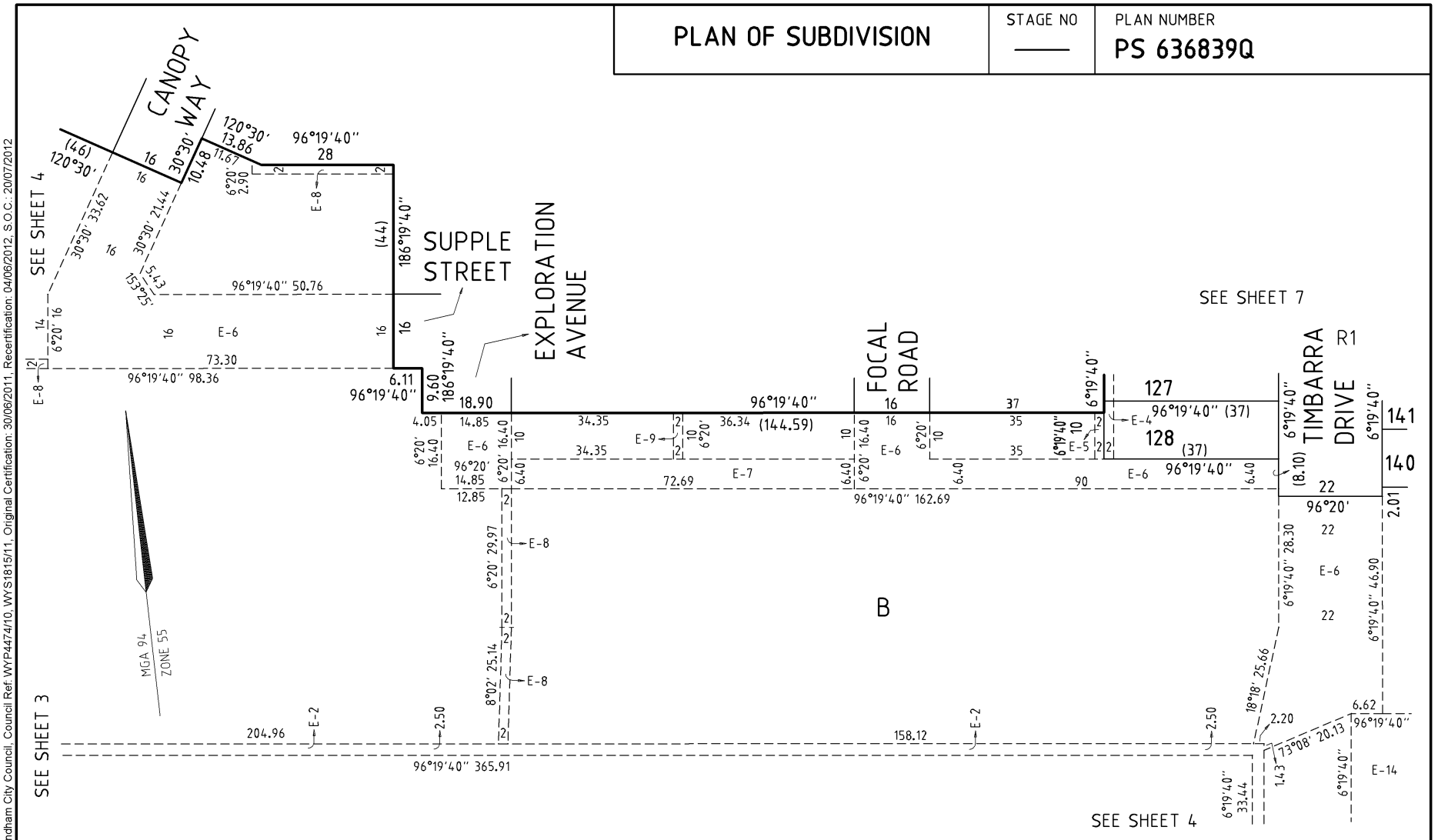
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2	No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha	SHEET 9

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:750

7.5 0 7.5 15 22.5 30 37.5 45

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

CREATION OF RESTRICTION "A"

LAND BURDENED AND LAND BENEFITED: REFER TO TABLE 1

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of any burdened lot on this plan to which this restriction applies shall not build or permit to be built or remain on the lot any building other than a building which has been constructed in accordance with endorsed memorandum of common provisions registered in dealing no AA2033 which memorandum of common provisions is incorporated into this plan.
This restriction shall cease to have affect 10 years after the date of registration of this plan.

CREATION OF RESTRICTION "B"

LAND BURDENED AND LAND BENEFITED: REFER TO TABLE 1

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of any burdened lot must not:

B1 build or erect or permit to be built or erected or remain on the burdened lot or any part of it, any building or structure other than a building or structure which has been constructed in accordance with plans, drawings, designs and specifications which have first been approved in writing by Places Victoria ABN 61 868 774 623 in accordance with Places Victoria's Riverwalk Design Requirements and Controls as amended from time to time;

B2 erect or allow any signs to remain on the burdened lot other than the following:

- B2.1 where a dwelling constructed on the burdened lot has been completed and is offered for sale (but not if the burdened lot remains vacant or the dwelling is partly completed and is offered for sale) any real estate agent's "for sale" sign not exceeding 2.4 metres x 1.8 metres; or
- B2.2 during the period of construction of a dwelling on the burdened lot signs of builders and tradespersons who are carrying out construction work on the burdened lot;

B3 use the burdened lot or any part of it as a display home except with Places Victoria's prior written consent.

Restriction B shall cease to have affect 10 years after the date of registration of this plan.

RIVERWALK RELEASE 2
No of Lots: 51 (excluding Lot B)
Release 2 Land Area: 3.248ha

SHEET 10

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN
SIGNATURE ..... DATE / /
REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /
.....
COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

CREATION OF RESTRICTION "C"

UPON REGISTRATION OF THIS PLAN OF SUBDIVISION THE FOLLOWING RESTRICTION IS CREATED

LAND BURDENED AND LAND BENEFITED:

LAND TO BE BURDENED:
Lots 118 to 168 (inclusive)

LAND TO BENEFIT:
Lot F on Plan of Subdivision number PS636838S

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of a burdened lot:

1. shall not develop a burdened lot, permit a burdened lot to be developed or permit a burdened lot to remain developed, other than in accordance with the Places Victoria Fibre To The Home Building Guidelines; and
2. must not occupy a dwelling on a burdened lot and must not obtain or procure an Occupancy Permit under the Building Act 1993 (Vic) for a dwelling on a burdened lot, prior to Places Victoria issuing a Fibre To The Home compliance certificate in respect of the dwelling on the burdened lot.

This restriction applies for the period from the date of registration of this Plan of Subdivision until the date that is 10 years after the issuing of an Occupancy Permit under the Building Act 1993 (Vic) in respect of the dwelling on the burdened lot.

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B)
Release 2 Land Area: 3.248ha

SHEET 11

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

	PLAN OF SUBDIVISION	STAGE NO	PLAN NUMBER
		———	PS 636839Q

TABLE 1

LAND BURDENED AND LAND BENEFITED – REFER RESTRICTIONS "A" AND "B"

CREATION OF RESTRICTION

BURDENED LOT No	BENEFITING LOTS
118	120, 129, 149
119	120, 121
120	119, 121
121	119, 120, 122
122	121, 123
123	122, 124
124	123, 125
125	124, 126
126	125, 127
127	126, 128
128	127
129	130, 148
130	129, 131, 133, 148
131	130, 132, 133
132	131, 133
133	130, 131, 132, 134, 148
134	133, 135, 147
135	134, 136, 145, 146, 147
136	135, 137, 143, 144, 145
137	136, 138, 142, 143
138	137, 139, 141, 142
139	138, 140
140	139, 141
141	138, 140, 142
142	137, 138, 141, 143
143	136, 137, 142, 144

BURDENED LOT No	BENEFITING LOTS
144	136, 143, 145
145	135, 136, 144, 146
146	135, 145, 147
147	134, 135, 146, 148
148	129, 130, 133, 147
149	150
150	149, 151
151	150, 152
152	151, 153
153	152
154	155
155	154, 156
156	155, 157
157	156
158	159
159	158, 160, 162
160	159, 161, 162
161	160, 162
162	159, 160, 161, 163
163	162, 164
164	163, 165
165	164, 166
166	165, 167
167	166, 168
168	167

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B)

Release 2 Land Area: 3.248ha

SHEET 12

CHRIS RUNTING & ASSOCIATES PTY LTD

LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS

20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Plan of Subdivision PS636839Q

Certifying a New Version of an Existing Plan (Form 21)

SUBDIVISION (PROCEDURES) REGULATIONS 2000

SPEAR Reference Number: S011384A
Plan Number: PS636839Q
Responsible Authority Name: Wyndham City Council
Responsible Authority Reference Number 1: WYP4474/10
Responsible Authority Reference Number 2: WYS1815/11
Surveyor's Plan Version: 23 (4.05.12)

Certification

This plan is certified under section 11 (7) of the Subdivision Act 1988
Date of original certification under section 6: 30/06/2011
Date of previous recertifications under Section 11(7): 16/04/2012

Public Open Space

A requirement for public open space under section 18 of the Subdivision Act 1988

Has not been made

Digitally signed by Council Delegate:	Peter Van Til
Organisation:	Wyndham City Council
Date:	04/06/2012

Appendix B - Phase One Report, Werribee Fields, Werribee, Victoria (OTEK, 2002)

OTEK
AUSTRALIA PTY LTD

Phase One Report

Location
Werribee Fields
Werribee, Victoria

Prepared for
Melbourne Water
Melbourne, Victoria

Date Prepared
October 2002

Environmental Professionals

Phase One Report

Werribee Fields
Werribee, Victoria

Prepared for :

Melbourne Water
100 Wellington Parade
East Melbourne, Victoria, 3002

Prepared by :

OTEK Australia Pty Ltd
408 Albert Street
East Melbourne, Victoria 3002

Date 10th October 2002

Author: Jane Waldock BEng (Civ)
State Manager,

Reviewer: David Lee, BS (Ag)
Senior Environmental Scientist,

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

OTEK Australia Pty Ltd (OTEK) was retained by Burns Bridge Pty Ltd (Burns Bridge), on behalf of Melbourne Water, to perform a Phase I Preliminary Environmental Site Assessment (ESA) at the Melbourne Water Werribee Fields site, located at Werribee, Victoria. The property comprises five allotments described as Lot P on PS401725T, Volume 3012 Folio 241 (part), Volume 4731 Folio 028 (part), Volume 10446 Folio 721, Volume 10308 Folio 858, Volume 5564 Folio 721. The area under review is, currently used as farm land with an area of approximately 200 ha. The purpose of the ESA was to assess the site with the view to obtaining an Environmental Certificate or Statement of Audit prior to disposal.

Victorian Contaminated Land Auditor Fouad Abo of Gutteridge Haskins and Davey (GHD) is reviewing this report for audit purposes.

PHYSICAL SITE CONDITIONS

Quaternary "Werribee Silt" with abundant carbonate nodules, gravel and sand overlying olivine basalt (Geological Survey of Victoria, Melbourne Map Sheet SJ 55-1) typify the geology of the area.

A search of the State Groundwater Database (GDB) records indicates that groundwater in the region stabilises at depths between 6.1 to 21.3 metres. The nearest groundwater bore is located approximately 950 metres north east of the site. One registered groundwater bore is located within a one-kilometre radius of the site and is used for domestic purposes. A further 18 bores are located within a two-kilometre radius of the site, and are predominantly used for domestic purposes.

The majority of the site is relatively flat. To the east of the site is the Werribee River. Between 0 and 150 metres west of the Werribee River an escarpment exists which bounds the river flood plain. The escarpment is approximately 15 metres high. The flood plain is also relatively flat, with a slight fall towards the river.

The land-use surrounding the property comprises agricultural land and the Melbourne-Geelong intercity highway and road easement, and the Melbourne Water Werribee Treatment Farm.

SITE INVESTIGATION FINDINGS

Based on the Phase I ESA, the following conclusions can be derived:

The Werribee Fields site can be considered as four areas: the River Paddock, the Hangar Paddock, the Grassing Paddock and the Administration Complex/Powercor Area.

The historical and physical reviews performed at the site have identified that contamination may exist due to previous activities and uses of the land.

The River Paddock and Grassing Paddock reveal the least potential for contamination. The greatest risk of contamination across these sites has eventuated due to the sewage effluent management practices employed at the site. Small sub-areas of these Paddocks have increased risk of contamination due to possible use as UST locations, and sheep dipping, waste disposal, timber treatment and chemical storage areas.

The Administration Complex/Powercor Area represents a high risk of contamination, due to its various use as administration, potential waste disposal ground, and its on-going use as a workshop, with storage of such items as transformers noted at the site. It is potentially contaminated with PCBs, hydrocarbons, asbestos, munitions, metals, and pesticides.

The Hangar Paddock also represents a high probability of contamination due to past uses of the site as an airport support facility. These practices may have resulted in contamination by asbestos, metals, hydrocarbons, munitions, and pesticides.

1. INTRODUCTION

Melbourne Water Corporation Limited (Melbourne Water) owns the Werribee Fields property located at the intersection of the Maltby Bypass and Princes Highway, in Werribee Victoria. The property comprises six allotments described as Lot P on PS401725T, Volume 3012 Folio 241 (part); Volume 4731 Folio 028 (part); Volume 10446 Folio 721; Volume 10308 Folio 858; and Volume 5564 Folio 721.

The area under review is currently predominantly used as farm land with an approximate area of 200 ha. The property consists of an administration complex, former airport support facilities, grazing land, a former farm residence (Carnboon), a workshop site and also includes waste water and storm water infrastructure for the Werribee Treatment Farm.

The area of the site under review is described in Table 1 below:

Table 1 – Area of Property

Volume/Folio	Area
Lot P on PS 401725T	63.99 ha
Vol 10308 Folio 858	22.77 ha
Vol 5564 Folio 721	21.81 ha
Vol 10446 Folio 721	89.31 ha
Lot 1 on PS 401725T	4.42 ha
TOTAL	**202.30 ha**

This facility and the surrounding operations are delineated on the Vicinity Map (Figure 1). The Site Map (Figure 2) provides a layout of the site, and other pertinent features.

1.1. PURPOSE

OTEK Australia Pty Ltd (OTEK) was retained by Burns Bridge Pty Ltd (Burns Bridge), on behalf of Melbourne Water, to perform a Phase I Environmental Site Assessment (ESA). The purpose of the ESA was to evaluate the environmental conditions at the Werribee Administration complex and Workshops and the Grassing Paddocks, which includes a disused airfield, hangars and timber treatment plant and former sewerage treatment areas. The evaluation comprised:

(i) Site History Study – conducting a background study of the past and present use, review of previous investigations conducted at the site, a site reconnaissance, and a report of findings for these works; and

(ii) Further physical investigations – to determine present sub-surface conditions at the site

The scope included the assessment of the site for auditing requirements as part of issuing a Certificate of Environmental Audit under section 57(i) of the Victorian Environmental Protection Act (1970) by the appointed auditor Dr Fouad Abo of Gutteridge Haskins and Davey (GHD)

2. *SCOPE*

The Information Study conducted by OTEK included:

- A review of Melbourne Water Property files at the Melbourne Water Office. The files included property details, title information and historical maps;
- A review of site ownership and land use history (Sands and MacDougall's directories held at the Victorian State Library);
- An historical Title Search dating back to the 1880's;
- Completion of a detailed site inspection to assess building layout, potential filled areas, usual activities, stored materials and to determine if any other visual signs of contamination exist (staining, stressed vegetation, etc);
- Assessment of the nature and location of buildings and other improvements, past and present;
- Co-ordination of archaeological, historical and subsurface investigations; and
- Derivation of conclusions concerning the potential for contamination at the property.

3. *SITE LAYOUT*

The site is roughly described as a chevron, with its apex pointing south-west. Two sides of the chevron are described by the Maltby Bypass and the Princes Highway. The eastern chevron point is bound by the Werribee River. This area is referred to as the River Paddock. The western chevron point is bound by Farm Road. This area is referred to as the Hangar Paddock. Cutting across the top portion is New Farm Road, which provides access to the administration facility, and also to the Werribee Treatment farm to the east of the Maltby Bypass.

The majority of the site is relatively flat. To the east of the site is the Werribee River. Between 0 and 150 metres west of the Werribee River an escarpment exists which bounds the river flood plain. The escarpment is approximately 15 metres high. The flood plain is also relatively flat, with a slight fall towards the river.

The land-use surrounding the property comprises agricultural land and the Melbourne-Geelong intercity highway and road easement, and the Melbourne Water Werribee Treatment Farm.

3.1. HANGAR PADDOCK

The Hangar paddock is approximated by a triangle. It is bound by the Princes Highway (to the west), Farm Road (to the north and East), and New Farm Road (to the south).

3.2. RIVER PADDOCK

The River paddock is approximated by a rectangle. It is bound by the Werribee River (to the south), the Maltby Bypass (to the south), Farm Road (to the east) and a residential property (to the north.)

3.3. GRASSING PADDOCK

The Grassing Paddock is approximated by a truncated triangle. It is bound by the Maltby Bypass (to the south), the Princes Highway (to the south/west), New Farm Road (to the north-east), and the administration complex/Powercor area (to the north).

3.4. ADMINISTRATION COMPLEX/POWERCOR AREA

The Administration workshop area is approximated by a triangle. It is bound by New Farm Road (to the north), the Princes Highway (to the west) and the Powercor area to the south. The Powercor area is bound by the grassing paddock to the south.

The site is zoned PUZI, being Public Use zone for the majority of the site. The site also contains the following overlays:

- H08 – Heritage Overlay for the Hangars
- DP02 - Development Overlay
- SL01 – Werribee River.

4. *SITE HISTORY*

The site history was compiled from a review of Melbourne Water historical property files, historical titles, personal interviews of available Melbourne Water staff, review of council and EPA records, and a review of site ownership and landuse history (Sands and MacDougall directories). This information is described in the sections below.

The Biosis Report describes the broad site history. In part the report says:

> 1880 – 1900: "...those lands included in the study area were leased for dairy farming, stock grazing, and vegetable growing. However, by 1900 the Board of works had ceased leasing the land and used it for wastewater irrigation in winter and sheep grazing in summer." (page 20)
>
> 1900 – 1928: "The study area was acquired by the MMBW over a period of years between 1921 and 1928 (Sands 1993: 3). The property between the Werribee River and Farm Road was purchased in 1927, while the two southerly properties between the Maltby Bypass and the Princes Highway were purchased in1921. Lastly the 'Hangar Paddock' property was bought in 1928." (page 20)

Specific uses are described in the sections below.

4.1. HANGAR PADDOCK

From 1938 to 1945, the Hangar Paddock was temporarily occupied by the Royal Australian Air Force (RAAF). During this time, five hangars, a workshop and numerous small buildings were constructed (in 1942), all with asbestos cladding. These buildings included battery and paint stores, fuel compounds, power houses and RAAF administration and accommodation huts. Upon vacating the site, the RAAF demolished and removed all buildings except the five hangars and the workshop, now a sheep hangar.

The Biosis Report notes that the RAAF vacated the hangars in 1952, and various structures were dismantled and the site was returned to pasture. (pager 21)

The Milsearch report also states:

> "Following the Air Force withdrawal, the numerous administrative and accommodation buildings ...were converted to a village for immigrants who were working at the Farm." (page 29)

Since the RAAF vacated the site, the primary landuse has been grazing. The sheep hangar was used for sheep dipping from the 1950's to the 1980's.

Hangar 5 was used as a Timber Treatment Plant (TTP) from the late 1960's to the mid '80's. In 1988 the TTP was dismantled and disposed of to Cleanaway Tullamarine landfill. Approximately two 44-gallon drums of dried CCA waste were produced each year. The drying racks east of Hangar 5 have been removed. A number of disused transformers containing PCBs were stored in the northern apron of Hangar 1 in the mid 1980s. The other hangars are currently used for storage.

4.2. RIVER PADDOCK

This section of the site contains the heritage listed Carnboon property which was sold to Melbourne Water in the 1920's by the Campbell family. It continued to be used as a residence by Melbourne Water staff for decades. The house was demolished in 1987.

The alluvial terrace sections of the River Paddock have been identified as having archaeological significance due to aboriginal activities at the site. Details of the archaeological registration of the site are contained in the Biosis report (Appendix C).

4.3. GRASSING PADDOCK

During the war years this site appears to have been used as an airfield associated with the Hangar paddock activities. (Milsearch Report)

Since the RAAF vacated the site, the primary landuse has been grazing. Effluent irrigation occurred in the southern most part of the site up until 1958, when part of the land was sold for development of Western Interchange.

Prior to the construction of the Maltby Bypass in 1958, the southern-most section was periodically irrigated with effluent from the Werribee Treatment Centre.

This paddock contains a small non-perennial dam. The Milsearch report states "Experience suggests that this dam may also have been used for illicit dumping of unwanted items, although its greater distance from the general military activity suggests that it would have been less attractive than the closer pondage [in administration area] ...."

4.4. ADMINISTRATION/ POWERCOR AREA

This part of the site contains the current administration complex for the Werribee Farm. Part of the site is a water feature which has been identified in the Milsearch report as "the site for a perennial dam during the review period....it may also have served at the time as an ideal location for disposal of munitions ad other noxious items by 'drowning'." (page 34)

5. *PREVIOUS ENVIRONMENTAL INVESTIGATION WORKS*

In 1992 Sinclair Knight completed an investigation to assess the potential soil contamination and odour emissions from the sewerage treatment facilities. Analysis indicated that the one sample taken from the TTP contained Arsenic and Chromium concentrations above Dutch C and Australian and New Zealand Environment and Conservation Council 1992 guidelines, respectively. A three-way composite sampled from the formerly irrigated area had Chromium and Zinc concentrations above Australian B guidelines.

A pre-sale assessment was completed by Beveridge Williams & Co on Lot 1 Princes Hwy (south of the Western Interchange). Conclusions suggested that no significant heavy metal impact existed on the allotment.

5.1. LAND TITLE INFORMATION

The site comprises five titles:

- Volume 110996 Folio 721, which lies between the Werribee River, the Maltby Bypass and an un-named road east-west road between Farm Road and the Maltby Bypass, 21.81 ha;
- Volume 10446 Folio 721 beside the Princes Highway, 89.13 ha;

- Volume 10308 Folio 858 a roughly triangular shaped lot bounded by the Maltby Bypass, Farm Road and the un-named east-west road between Farm Road and the Maltby Bypass, 22.77 ha;
- Lot P on PS 401725T Volume 3012 Folio 241 (part) and Lot P on PS Volume 4731 Folio 028 (part) 63.99 ha; and
- Lot 1 PS 401725T (not Reg'd).

5.2. AERIAL PHOTOGRAPH REVIEW

An aerial photograph review of the site was conducted at the Land and Survey office of the Department of Natural Resources and Environment in Melbourne. The results of the review are presented in the Table 2 below:

Table 2 : Aerial Photograph Review Summary

Year	Photograph Number	Description
1945	12169 Hobart Run 7	Resolution good, building on site. Surrounding landuse: buildings, trees and residential.
1965	T452-186 Project 1519	As above in 1965.
1979	T775-141 F600 Hobart Area Run 7	Resolution poor, possibly buildings in area, unable to see site.
1989	1145-47 M864 Hobart Area Run 6	Resolution good, building on site. Surrounding landuse: buildings, trees and residential.
1998	1291-53 M195 Fire Assessment Run 4	As above in 1989.

5.3. ENVIRONMENT PROTECTION AUTHORITY RECORDS/MELBOURNE & METROLPOLITAN BOARD OF WORKS RECORDS

EPA Certificates of disposal were not available.

MMBW records indicate that Hangar 5 was used as a Timber Treatment Plant (TTP) from the late 1960's to the mid 1980's. In 1988 the TTP was dismantled and disposed of, along with ten 44 gallon drums of dried copper chrome arsenate (CCA) sludge to Cleanaway Tullamarine landfill. Rumours exist regarding the burial of CCA waste in either the Hangar Paddock or the southwest field. During the TTP's operation approximately two 44-gallon drums of dried waste were produced each year, indicating there could be up to 20 drums of CCA waste buried on the site.

5.4. PERSONNEL INTERVIEWS

No personnel were interviewed by OTEK as part of this work, but information of previous documented interviews obtained by Melbourne Water officers was reviewed by Otek.

A number of people associated with the site were interviewed as part of the preparation of the Biosis and Milsearch reports.

5.5. SITE HISTORY SUMMARY

The review of aerial photography, site ownership and landuse history indicates that the land use surrounding the site has historically been residential and agricultural.

The historical property titles and plans of the property since 1900 are included in Appendix A.

6. *ADDITIONAL REPORTS PREPARED*

6.1. BIOSIS REPORT

Biosis Research Pty Ltd (Biosis) conducted an archaeological and cultural heritage survey of the Werribee Field Development in March 2000.

One aboriginal site was identified within the study area, located on the alluvial terrace adjoining the bank of the Werribee River. This site was classified as a significant site, with a potential for direct negative impact. It is possible that the size of the site is larger than currently assessed.

Three non-aboriginal historical archaeological sites were identified, all of which will be directly impacted by the development. Refer to the Biosis Report (Appendix C)

The Biosis report is reproduced in full in Appendix B.

6.2. MILSEARCH REPORT

Milsearch Pty Ltd (Milsearch) conducted a review of the World War II-Era Military Activity at the site in April 2000.

This report identified the key military activities and periods of use for the site. It established that the potential for residual contaminants from munitions at the former satellite field was considered to be minimal. It identified the potential for underground storage tanks (USTs) at the site, and the potential for contamination from these USTs.

The report identified considerable potential for residual contaminants arising from industrial activity undertaken in and around the hangars and supporting facilities, including

- contamination from lead (due to battery refurbishment);
- preservative agents and solvents (from bearing and equipment recoveries);
- aircraft hydraulic, cooling and fuel systems residues;
- asbestos; and
- plumes from USTs.

The report also noted that unwanted aircraft parts, other disposal items and some munitions will exist in one or more centralised burial sites. Illicit burial sites were also postulated. Three zones of aircraft break-down detritus were located.

The full report is reproduced in Appendix C.

6.3. ENTERRA REPORT

Enterra Pty Limited (Enterra) undertook a series of sub-surface geophysical surveys and anomaly investigations at the Werribee Field Development site between November 2000 and February 2001. The investigations found no evidence of unexploded ordinance (UXO) or live ammunition on the site. One inert grenade and a small quantity of expended small arms ammunition were located.

Seven burial sites were identified, most of size less than 10m3 containing mostly building material. A number of potential UST and CCA drum burial locations were identified.

This report is reproduced in full in Appendix D.

6.4. DETAILS OF SURROUNDING AREA

The landuse surrounding the property includes residential and rural properties. Residential properties are located north of the site, 40 metres across Farm Road. Landuse in the area surrounding the site is shown in the Vicinity Map (Figure 1).

6.5. POTENTIAL RECEPTORS

Potential sensitive receptors of contamination include residences to the west and north, and the Werribee River to the east.

7. *GEOLOGY AND HYDROGEOLOGY*

7.1. REGIONAL GEOLOGY

Quaternary "Werribee Silt" with abundant carbonate nodules, gravel and sand overlying olivine basalt (Geological Survey of Victoria, Melbourne Map Sheet SJ 55-1) typify the geology of the area.

7.2. REGIONAL HYDROGEOLOGY

Based on the information published by the Department of Water Resources Victoria (1989), groundwater in the region typically has low yields, Total Suspended Solids results range between 473 and 6253 and is of poor quality. The nearest surface water body is the Werribee River, located at the eastern boundary of the property.

A search of the State Groundwater Database (GDB) records indicates that groundwater in the region stabilises at depths between 6.1 to 21.3 metres. One registered groundwater bores is located within a one kilometre radius of the facility. The bore is used for domestic purposes, and summarised in the following Table 3:

Table 3 – Groundwater Data Base Information

GDB Bore Number	Location from Site (metres)	Standing Water Level (metres)	Total Depth of Bore (metres)
59834	950 SE	Unknown	15.24

8. *POTENTIAL CONTAMINANTS OF CONCERN*

8.1. IRRIGATION OF SEWAGE TREATMENT EFFLUENT

Dr Bond writing in CSIRO Australian Journal of Soil Research, indicated that the three main risks associated with the use of effluent to irrigate crops are: salinity, excess nitrate and collapse of soil structure. Given the typical metals loading in Melbourne Water's effluent, if crops were continually irrigated over a period of time excessive metals would build up in the soil.

The main metals of concern are zinc and copper; elevated levels of these elements are toxic to plants.

8.2. CHEMICAL/DANGEROUS GOODS STORAGE HISTORY

8.2.1. Hangar Paddock

From 1938 to 1945 the northern section (now referred to as the Hangar Paddock) was temporarily occupied by the Royal Australian Air Force (RAAF). During this time, five hangars, a workshop and numerous small buildings were constructed. These buildings included battery and paint stores, fuel compounds, power houses and RAAF administration and accommodation huts.

The sheep hangar was used for sheep dipping from the 1950's to the 1980's.

Hangar 5 was used as a Timber Treatment Plant (TTP) from the late 1960's to the mid '80's. In 1988 the TTP was dismantled and disposed of, along with ten 44 gallon drums of dried copper chrome arsenate (CCA) sludge to Cleanaway Tullamarine landfill.

Rumours exist regarding the burial of CCA waste in either the Hangar Paddock or the Grassing Paddock.

Anecdotal evidence indicates that herbicides and possibly CCA wastes were stored in the compound now housing the communication tower.

During the mid 1980's a number of disused electrical transformers were stored on a concrete apron at the north end of Hangar 1. (Sinclair Knight report)

8.2.2. River Paddock

No records have indicated the storage of chemicals or dangerous goods on this portion of the site.

8.2.3. Grassing Paddock

Rumours exist regarding the burial of CCA waste in either the Hangar Paddock or the Grassing Paddock. A timber treatment area was also identified as potentially existing in the south west of this paddock.

8.2.4. *Administration /Powercor Area*

Transformers have been stored on the site. There is minimal chance that PCBs exist in the transformers at the site.

Hydrocarbon impact may exist in the shallow subsurface from the vehicle use of the area.

A number of substations are also present within the Administration Complex and Workshop area.

Treated power poles have also been stored on this section of the site.

8.3. UNDERGROUND AND ABOVEGROUND STORAGE TANKS

8.3.1. *Hangar Paddock*

From 1938 to 1945 the northern section (now referred to as the Hangar Paddock) was temporarily occupied by the Royal Australian Air Force (RAAF). During this time a number of underground storage tanks (USTs) and septic tanks were installed. Upon vacating the site, the RAAF demolished and removed all buildings except the five hangars and the workshop (sheep hangar). Anecdotal evidence suggests that the removal of at least one UST was attempted, but abandoned due to the difficulty in the removal process. Up to six USTs may exist in different locations at the site, with the exact locations unknown at present.

8.3.2. *River Paddock*

Information in a Melbourne Water file suggests that an asbestos filled tank may exist in the vicinity of the demolished homestead in the south-eastern field.

8.3.3. *Grassing Paddock*

One possible UST has been identified within the Grassing Paddock, located in the northwest corner of the Powercor area.

8.3.4. *Administration /Powercor Area*

A waste oil tank is present on the Powercor site, separate from the Melbourne Water operations.

Two USTs (diesel and ULP) are present between the Administration building and the Powercor workshops. These are currently in use by Melbourne water.

8.4. ASBESTOS

8.4.1. Hangar Paddock

From 1938 to 1945 the northern section (now referred to as the Hangar Paddock) was temporarily occupied by the Royal Australian Air Force (RAAF). During this time, five hangars, a workshop and numerous small buildings were constructed, all with asbestos cladding.

8.4.2. River Paddock

Information in a Melbourne Water file suggests that an asbestos filled tank may exist in the vicinity of the demolished homestead in the south-eastern field.

An asbestos pipeline exists on the north boundary of this part of the site. It terminates in a pit.

8.4.3. Grassing Paddock

No potential asbestos has been identified in the Grassing Paddock.

8.4.4. Administration /Powercor Area

Asbestos may exist in the laboratories and administration building.

The workshops southeast of the Administration complex have been leased to Powercor since 1997. Asbestos may exist in these buildings (for example: tile in the bathrooms and switchboards).

8.5. POTENTIAL OFF-SITE SOURCES

Potential off-site sources of migrating hydrocarbons were not observed.

The sewerage management practices across the Werribee Farm area may have resulted in some off-site sourced contamination. However, the ability to distinguish this from contamination caused by those same practices on site is very low.

The site is not expected to have been impacted by any off-site sources of contamination due to its remoteness from any industrial areas, and the surrounding land use.

9. CONCLUSIONS

Based on the Phase I ESA, the following conclusions can be derived:

- The Werribee Fields site can be considered as four areas: the River Paddock, the Hangar Paddock, the Grassing Paddock and the Administration Complex/Powercor Area.
- The historical and physical reviews performed at the site have identified that contamination may exist due to previous activities and uses of the land.
- The River Paddock and Grassing Paddock reveal the least potential for contamination. The greatest risk of contamination across these sites has eventuated due to the sewage effluent management practices employed at the site. Small sub-areas of these Paddocks have increased risk of contamination due to possible use as UST locations, and timber treatment plant activities.
- The Administration Complex/Powercor Area represents a high risk of contamination, due to its various uses as administration, potential waste disposal ground, and its on-going use as a workshop, with storage of such items as transformers noted at the site. It is potentially contaminated with PCBs, hydrocarbons, asbestos, munitions, metals, and pesticides.
- The Hangar Paddock also represents a high probability of contamination due to past uses of the site as an airport support facility. These practices may have resulted in contamination by asbestos, metals, hydrocarbons, munitions, and pesticides, sheep dip products and effluent irrigation.

10. LIMITATIONS

The conclusions presented in this report are relevant to the conditions of the site and the state of legislation currently enacted as at the date of this report. We do not make any representation or warranty that the conclusions in this report will be applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.

OTEK has used a degree of skill and care ordinarily exercised by reputable members of our profession practicing in the same or similar locality. Conclusions are based on representative samples or locations at the site, the intensity of those samples being in accordance with the usual levels of testing carried out for this type of investigation. Due to the inherent variability in natural soils we cannot warrant that the whole overall condition of the site is identical or substantially similar to the representative samples.

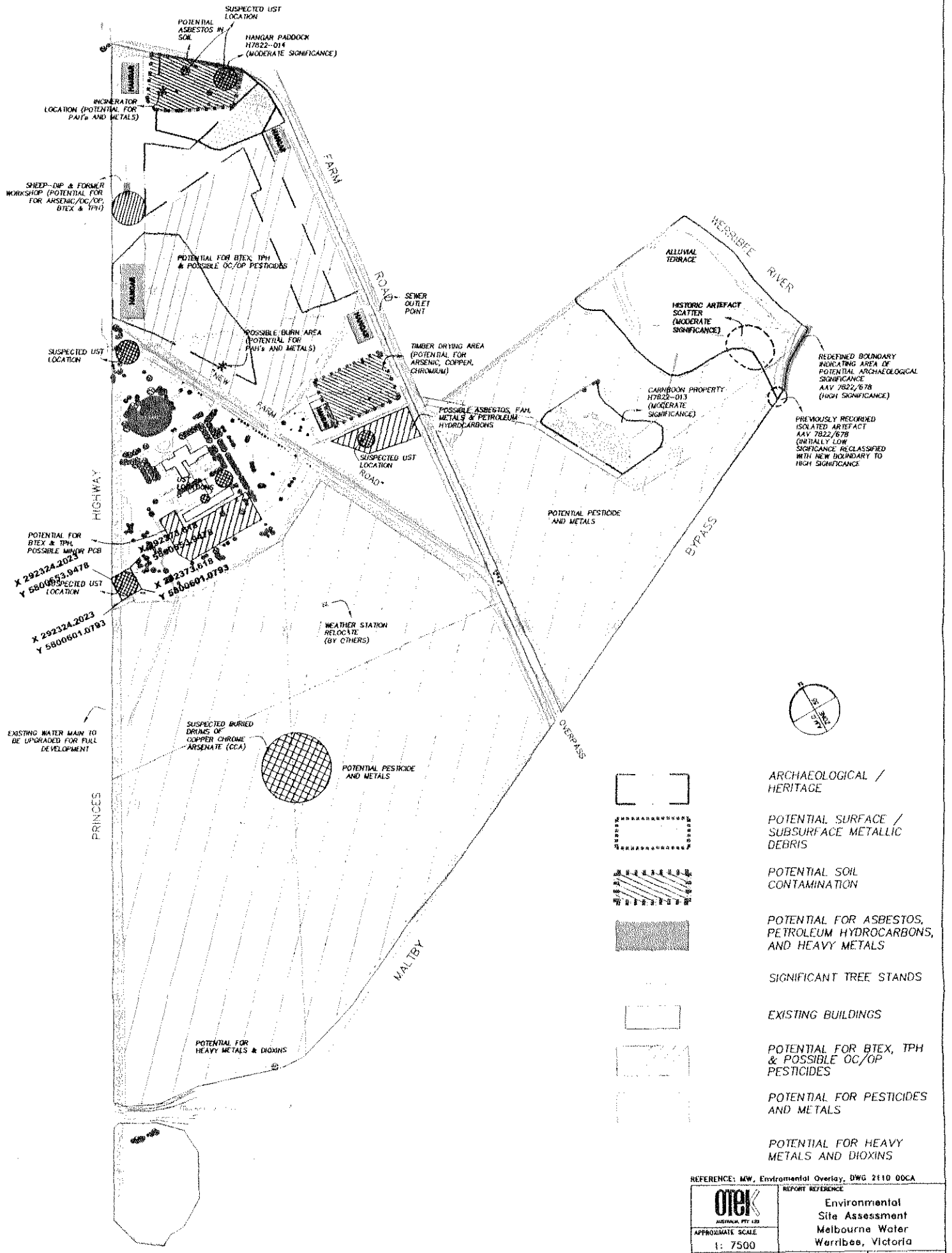
This report has been prepared solely for Melbourne Water Pty Ltd and the Contaminated Land Auditor employed by Melbourne Water Pty Ltd, for the specific purpose to which it refers. No responsibility is accepted to any third party and neither the whole of the report or any part or reference thereto may be published by either Melbourne Water Pty Ltd or the Contaminated Land Auditor in any document, statement or circular nor in any communication with third parties without our prior written approval of the form and context in which it will appear. The Contaminated Land Auditor employed by Melbourne Water Pty Ltd in this project may utilise this report in the appropriate manner to proceed to the obtainment of a certificate or statement of audit.

11. REFERENCES

Department of Water Resources (1989) *Water Victoria: A Resource Handbook*, VGPO, Melbourne.

Geological Survey of Victoria (1974) Melbourne 1:63,360, Map sheet No. SJ55-1,.

CSIRO Media Release *Disposal Challenge for an Effluent Society* 7th September 1998, Reference 98/209, Dr Warren Bond.



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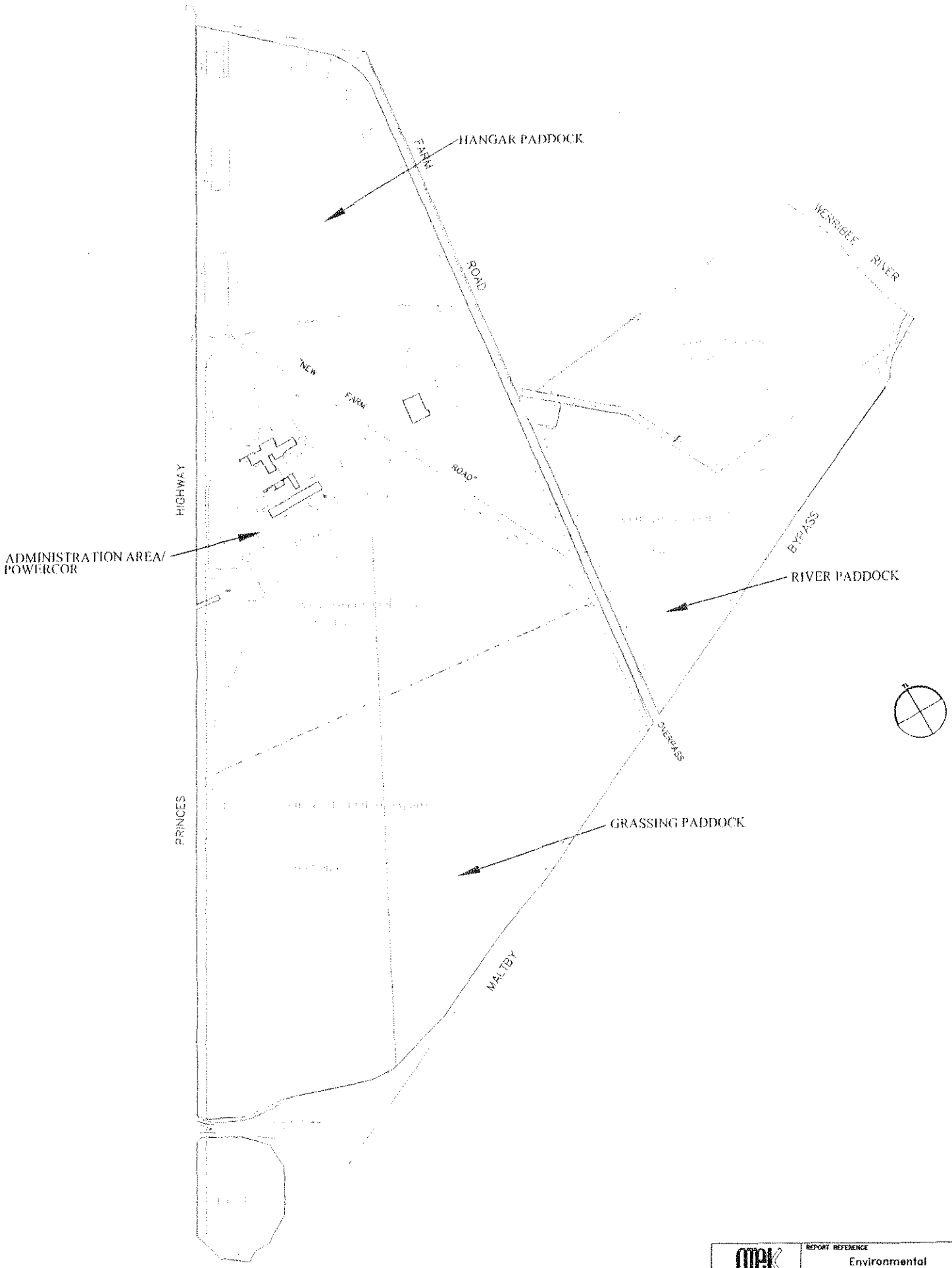
DRAWN: NAF DATE: 03/05/2000	CHECKED: DATE: JOB #: M0003
TITLE: CONTAMINANT SOURCE MAP	FIG. #: 3

2000/M0003/SITEMAPS/M0003SM06.DWG



Olek Australasia Pty Ltd		REPORT REFERENCE: Environmental Site Assessment Melbourne Water Werribee, Victoria
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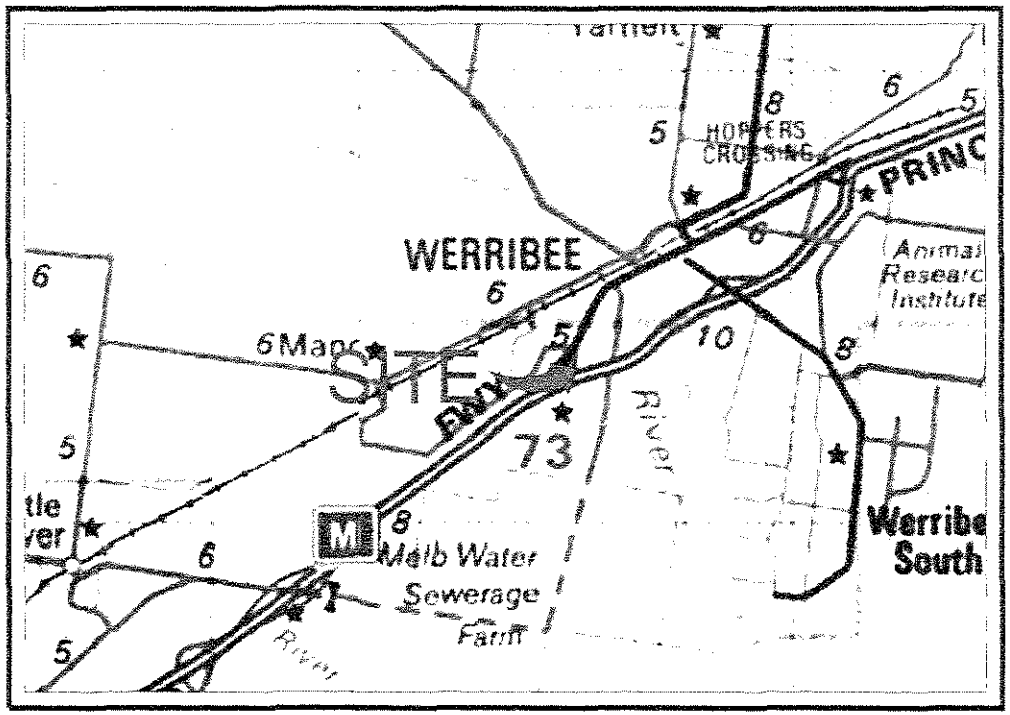
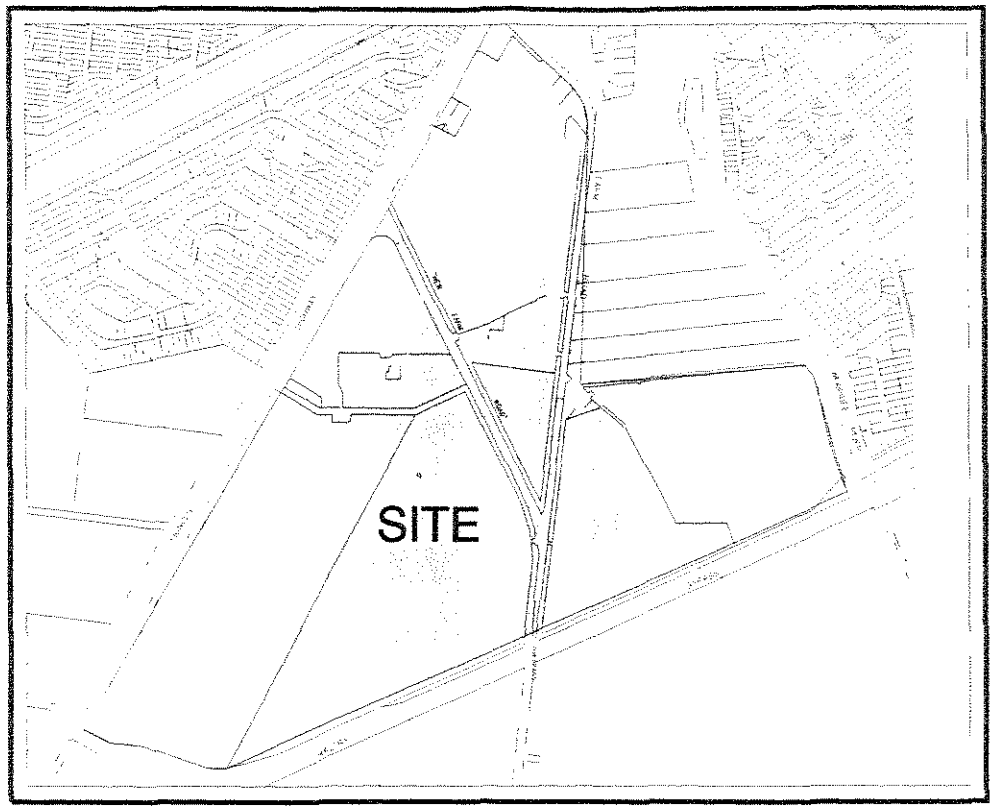
DRAWN: NAF DATE: 03/05/2000	CHECKED: DATE:	JOB #: M0003
TITLE: SITE MAP		FIG. #: 2

2000/M0003/SITE MAPS/TITLES.DWG

Figure 1



Reference : Melways Greater Melbourne Street Directory Edition 28 Map 511 H4



OTEK AUSTRALIA PTY LTD
MELBOURNE OFFICE

ENVIRONMENTAL SITE ASSESSMENT

VICINITY MAP
MELBOURNE WATER
WERRIBEE, VICTORIA

M2003

REGISTER SEARCH STATEMENT Land Titles Office, Victoria **Page 1**

Security no : 1240020334498

Volume 10308 Folio 858
Produced 20/06/2002 02:03 pm

LAND DESCRIPTION
Lot M on Plan of Subdivision 401043W.
PARENT TITLE Volume 08564 Folio 721
Created by instrument PS401043W 10/12/1996

REGISTERED PROPRIETOR
Estate Fee Simple
Sole Proprietor
MELBOURNE WATER CORPORATION
PS401043W 10/12/1996

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION
SEE PS401043W FOR FURTHER DETAILS AND BOUNDARIES

DEALING ACTIVITY IN THE LAST 105 DAYS

NIL

STATEMENT END

Natural Resources and Environment

AGRICULTURE • RESOURCES • CONSERVATION • LAND MANAGEMENT

F10446-721-1-4

REGISTER SEARCH STATEMENT Land Titles Office, Victoria Page 1

Enquiry no : 1
Security no : 1234405893338V
Customer code:

Volume 10446 Folio 721
Printed 10/12/2001 07:01 pm

LAND

LOT 1 on Plan of Subdivision 412756U
PARENT TITLE Volume 10309 Folio 293
Created by instrument PS412756U 28/05/1999

REGISTERED PROPRIETOR

ESTATE FEE SIMPLE
SOLE PROPRIETOR
MELBOURNE WATER CORPORATION, LEVEL 5, 60" BOURKE ST. MELBOURNE 3000
PS412756U 28/05/1999

ENCUMBRANCES, CAVEATS AND NOTICES

NOTICE Section 47(1) HERITAGE ACT 1995
HERITAGE REGISTER NO. 1884
X234908X 29/12/2000

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988.
Any other encumbrances shown or entered on the plan.

SEE PS412756U FOR FURTHER DETAILS AND BOUNDARIES

UNREGISTERED DEALINGS

Obtain Final Search Statement for unregistered dealings

STATEMENT END

LAND VICTORIA
283 Queen Street, Melbourne 3000 DX 250639
Telephone: (03) 9603 5555 Facsimile: (03) 9603 5556

Entered in the Register Book

Vol. 3012 Fol. 602241

CANCELLED

VICTORIA.

Certificate of Title

UNDER THE "TRANSFER OF LAND ACT 1890."

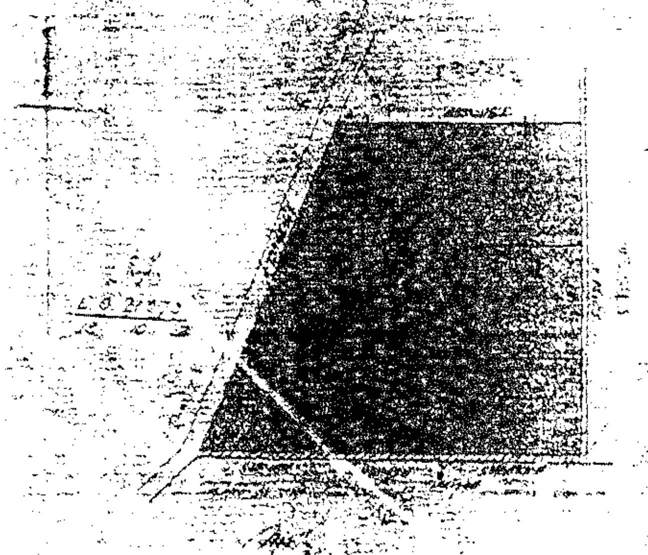
INDEX PLAN No. 221
PARCEL No. 500 to 506

Stephen Tinkler of Werribee Farmer is now the proprietor of an Estate in Fee-simple, subject to the Encumbrances notified hereunder in All that piece of Land delineated and coloured red on the Map in the margin, containing Three hundred and eighty-one acres and twenty four perches or thereabouts being Lot 4 on Plan of Subdivision No 4009 lodged in the Office of Titles and being Crown allotments 6 and 6A and part of Crown allotment H section [illegible] Crown allotments six and seven and part of Crown allotment [illegible] section eight Parish of Manor [illegible] County [illegible]

Dated the [illegible] day of [illegible] One thousand nine hundred and four

Assistant Registrar of Titles

ENCUMBRANCES REFERRED TO.



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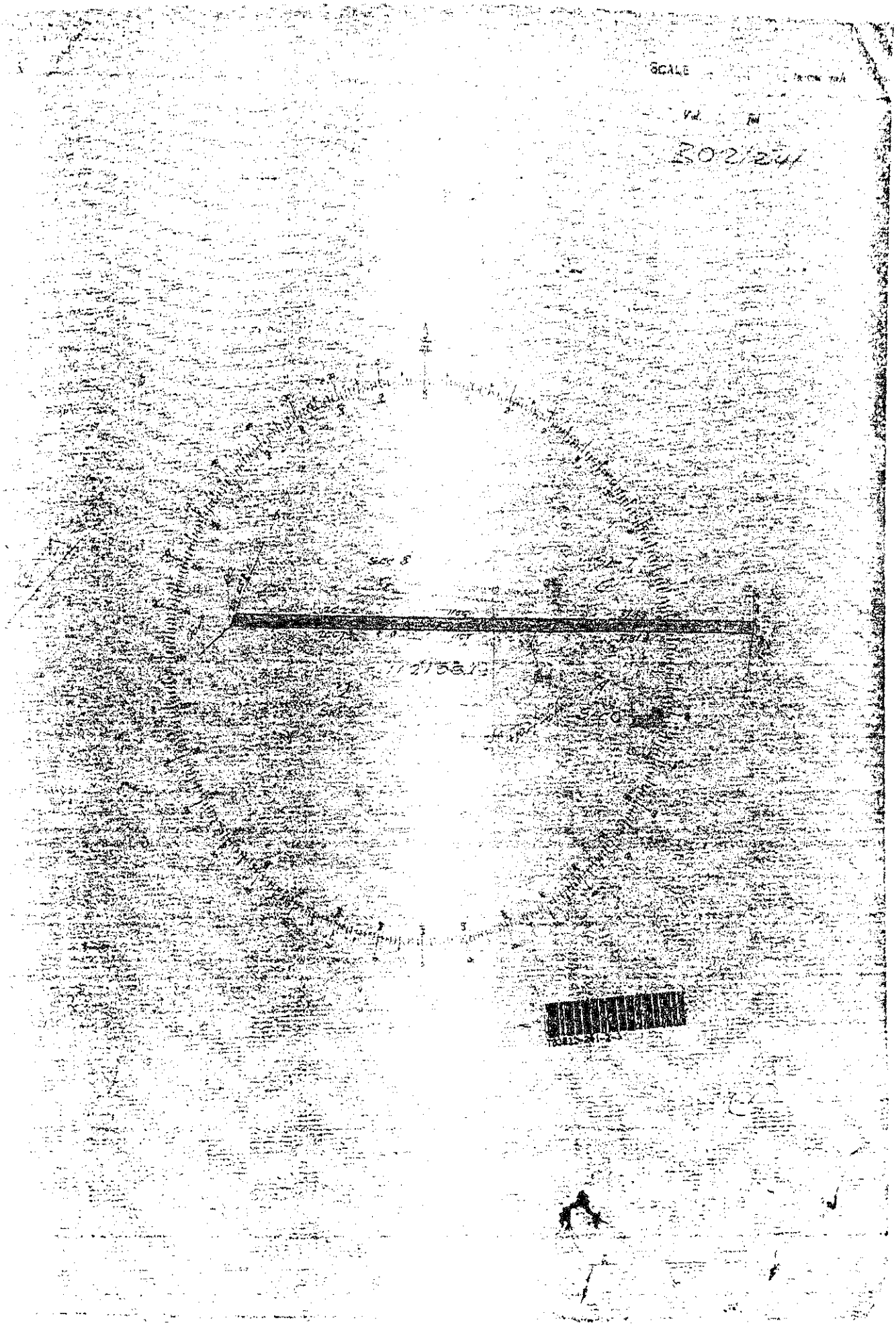
SCALE
Vol. Fol.
302/24

Vol. 3012 Fol. 241 / 16888 Transfer 19/4/1890 Application

Nature of Instrument	Day and Hour of its Production	Names of the Parties to it	Number of Seal thereon
Mortgage DISCHARGED (stamp)	The 19th September 1905 at 2.47 p.m.	Stephen Tinkler to John Percy Coghurwith [signature] Assistant Registrar of Titles	230987

Caveat No 53691 lodged 19 September 19… Caveat No 53691 withdrawn 17th March …

Assistant Registrar of Titles

Melbourne and Metropolitan Board of Works … Spencer Street Melbourne … now the proprietor of the within described estate pursuant to a transfer from Stephen Tinkler registered on the 17th day of March 1921 and numbered 917677

[signature] Assistant Registrar of Titles

TRANSFER as to part to … registered on 24 July … numbered 1112754 … as to part, see Certificate of Title … 9460 … [signature] Assistant Registrar of Titles

TRANSFER AS TO PART K417608… 1985 CANCELLED AS TO PART See Vol. 9531 Fol. 200

… Titles

TRANSFER AS TO PART No. A990713 Registered 16th June 1960 CANCELLED AS TO PART See Vol. … Fol. … 8265 235

U800136A 15/12/98

… AS TO PART … Titles

U800136A 15/12/98

VICTORIAN PIPELINES COMMISSION has pursuant to section … of Transfer of Land Act lodged a Notification relating to … compulsory acquisition of … herein. Dated 17 … 1970 Entered 20 … 1970 No. E 705573 (Plan …)

CANCELLED AS TO PART PS 415685E

COUNTRY ROADS BOARD has pursuant to section 37 of the Transfer of Land Act served a Notification relating to the compulsory acquisition of land as shown … Dated 30 MAR 19… Entered … No. E 73…5 (Plan …)

CANCELLED PS … Assistant Registrar of Titles


Natural Resources and Environment
INTENTIONALLY
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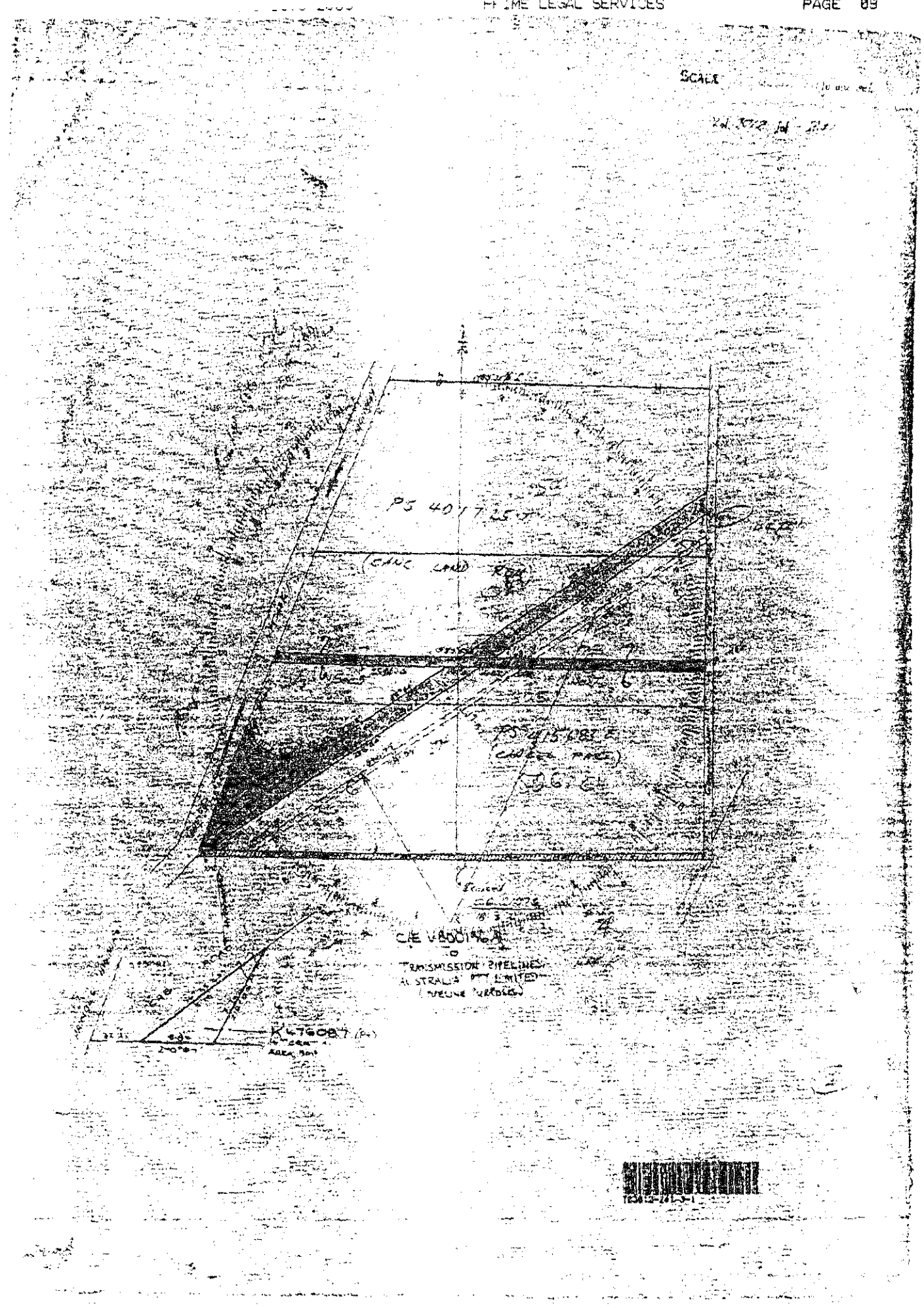
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(CANC LAND
PS 415087F
(CANCL PART)
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AUSTRALIA PTY LIMITED


Natural Resources and Environment
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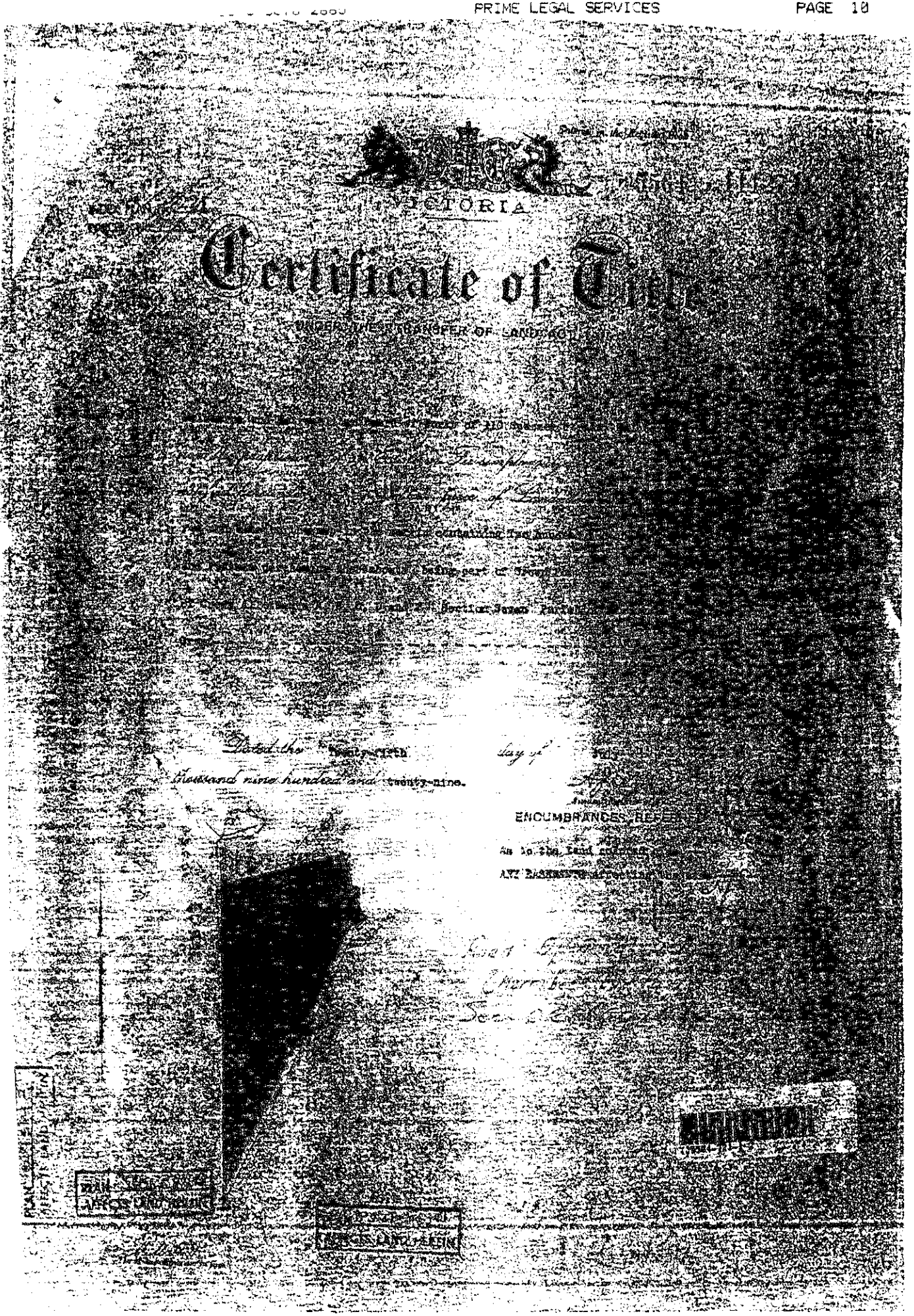


VICTORIA

Certificate of Title

UNDER THE TRANSFER OF LANDS ACT 1958

Dated the twenty-fifth day of July

Thousand nine hundred and twenty-nine.

ENCUMBRANCES REFERRED TO

Vol. 2553 Fol. 910562 Transfer Application
4557 911345 Red Int No 3051192

CANCELLED AS TO PART Easement No. A990713
Registered 11 June 1960
CANCELLED AS TO PART See Vol. 8205 Fol. 836

VICTORIAN PIPELINES COMMISSION
Notice under Section 49 of Transfer of Land Act
... compulsory acquisition of the easement over land herein.
Dated 27 AUG 1970
Entered 25 AUG 1970
(Plan with letter)

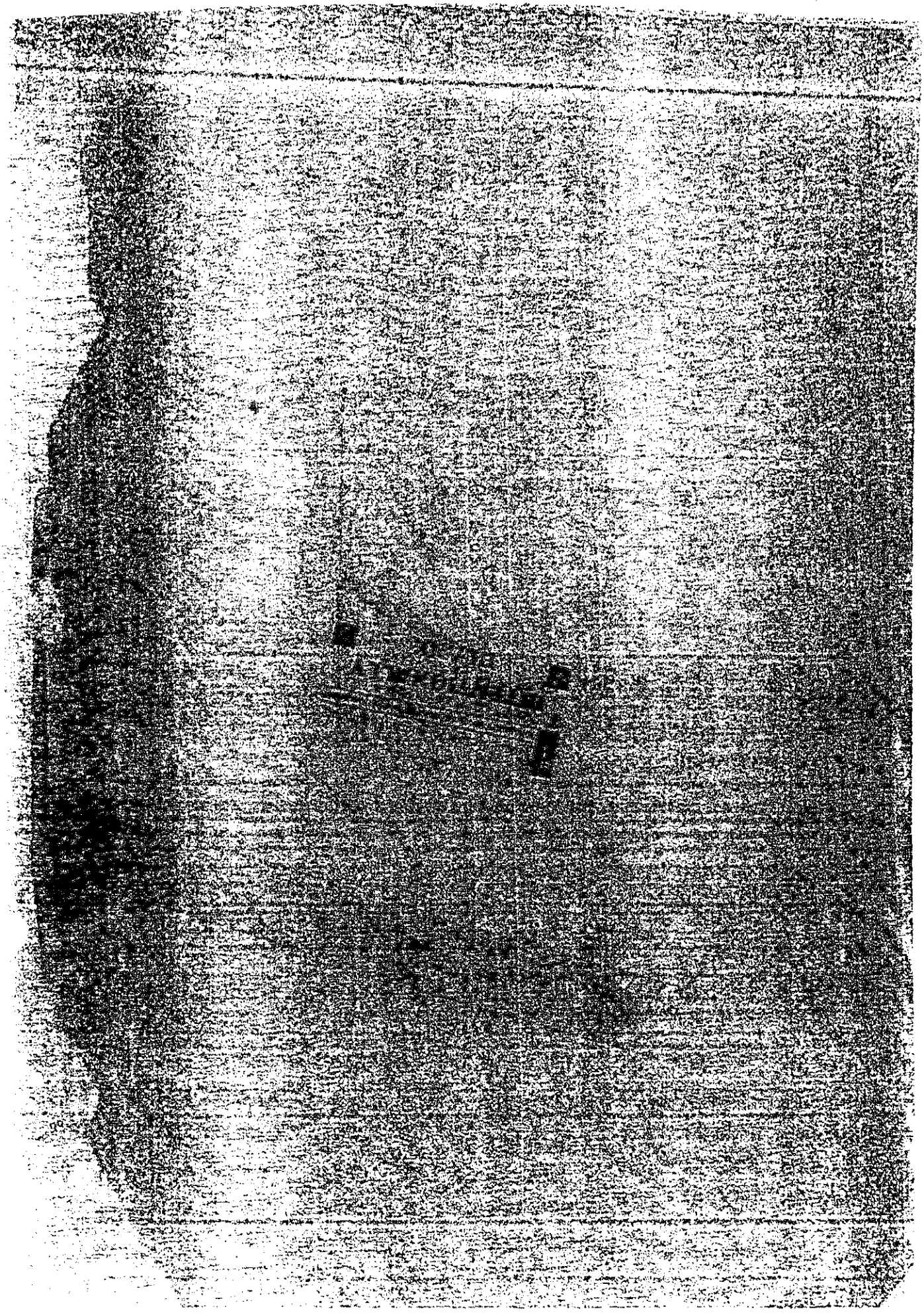
VICTORIAN PIPELINES COMMISSION
... of Section 47 of Transfer of Land Act ... compulsory acquisition ... land herein.
23 SEP 1970
25 SEP 1970
(Plan with letter)

CANCELLED as to part
SECTION 24 SUBDIVISION
TITLES ISSUED AS SET
Vol ... Fol 176
Vol ... Fol 177

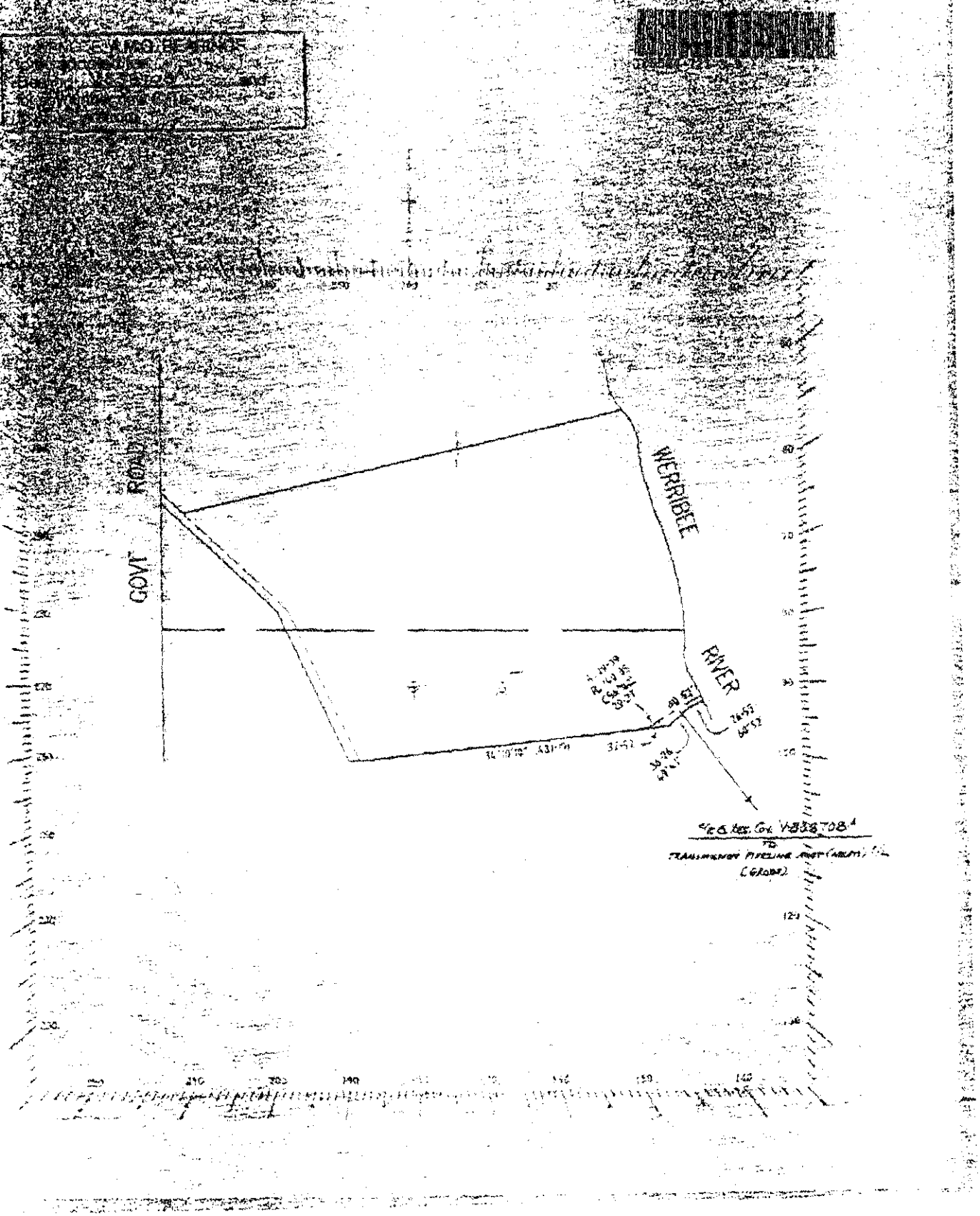
CANCELLED AS TO PART

CREATION OF EASEMENT
... 1998

COVENANT AS TO PART
... 14/01/1998



Volume 5564 Folio 721



Appendix C - Environmental Site Assessment, Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria (OTEK 2012)

Environmental Site Assessment

Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria



Prepared for:	Melbourne Water Corporation
Proposal Number:	3106004
Date Submitted:	14 December 2012
Submitted by:	OTEK Australia Pty Ltd
Name:	Richard H. Evans
Title:	Principal Geologist / Operations Manager VIC/TAS

OTEK Melbourne, Level 1, 222 St Kilda Road, St Kilda, VIC 3182
T: (+61) 3 9095 1900 F: (+61) 3 9095 1999 ABN 32 054 371 596

Environmental Site Assessment

Riverwalk Sub-Area 4A, New Farm Road, Werribee, Victoria

Prepared for:
Melbourne Water Corporation
100 Wellington Parade
East Melbourne VIC 3002

Prepared by:
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Level 1, 222 St Kilda Road
St Kilda VIC 3182
T: (+61) 3 9095 1900 F: (+61) 3 9095 1999

Report Issued:	Draft:	21 December 2009
	First Draft Revision:	24 May 2012
	Final:	14 December 2012

Author: 

Luke Dal Lago
Project Manager

Reviewer: 

Richard H. Evans
Principal Geologist / Operations Manager VIC/TAS

Distribution:

MELBOURNE WATER:	1 x Electronic Copy
GHD:	1 x Electronic Copy
OTEK:	1 x Electronic Copy

Disclaimer:

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Table of Contents

Tables (in text)

Analytical Tables

Analytical Tables (continued)

Title **Table**

Analytical Tables (continued)

Figures

Appendices

Executive Summary

OTEK Australia Pty Ltd (OTEK) was commissioned by Melbourne Water to perform an Environmental Site Assessment (ESA) including remediation activities for Sub-Area 4A of the Melbourne Water owned Riverwalk site located at Farm Road, Werribee, Victoria (site). The site had been proposed to be sold for residential subdivision as part of an urban redevelopment project being carried out by Places Victoria. Dr Fouad Abo of GHD Pty Ltd, who is appointed by the Environment Protection Authority (EPA) as an Auditor for Contaminated Land, has been commissioned by Melbourne Water to undertake an independent review of the ESA in order to complete an Environmental Audit Report for the site.

The 5.887ha site is an irregularly shaped area and is currently vacant. Historical use of Sub-Area 4A has included agricultural activities during the late 1800s and early 1900s followed by occupation by the Royal Australian Air Force (RAAF) in the 1940s to early 1950s. The site formerly contained RAAF infrastructure which included two sleeping huts, an officers antechamber, a workshop, latrines, ablutions and subsurface septic and soak pits and asbestos pipe. This site infrastructure has been removed as detailed in this report. The site is bordered to the north by Princess Highway and Area 5, to the east by Area 5, to the south by Area 2 and to the west by Area 1. The property contained within Volume 11367, Folio 778.

In accordance with the State Environmental Protection Policy (Protection and Management of Contamination of Land) (Land SEPP) site acceptance criteria for the ESA includes guidelines obtained from the National Environment Protection (Assessment of Site Contamination) Measure, (NEPM, December 1999). The NEPM outlines various ecological and human health contaminant protection criteria known as ecological investigation levels (EILs) and health investigation levels (HILs). An extensive soil assessment program was undertaken by OTEK across the site in April 2008.

Infrastructure removal works occurred in July 2009 and October 2010 and the resulting excavations and/or underlying soil was validated for relevant contaminants of potential concern (COPC). Material used to fill the exactions was tested, with the analytical results reviewed by the Auditor prior to the use of the imported fill at the site.

Natural shallow silt and clay encountered is identified as Deutgam Silt which is known to have natural elevated concentrations of barium, manganese, nickel and vanadium. Analytical results confirmed this. Groundwater at the site has ranged from approximately 8.5 to 11mBGS and is classified as Segment C based on total dissolved solid (TDS) concentrations.

Results from the programs indicate that the concentrations of COPC in the soil across the site were generally low and well below guideline levels for standard residential land use. Barium and vanadium concentrations slightly in excess NEPM EIL criteria were identified. These were considered to be representative of background levels not requiring additional assessment or remediation. There was no evidence of any anthropogenic related elevated concentrations of any identified COPC.

Monitoring wells MW-7 and MW-8 was installed to assess the potential for impacts associated with former underground fuel storage and to assess general conditions. Groundwater analytical results for these wells and for other Riverwalk area wells demonstrate that groundwater contamination has not occurred. Elevated nitrate identified is consistent across the entire Riverwalk area and may represent background conditions or regional conditions associated with former agriculture. Boron was reported at concentrations above the Maintenance of Ecosystem criteria in MW-8, and at concentrations above all other Riverwalk area wells. Based on multiple lines of evidence presented in section 13 of this report, these concentrations are not considered to be significant or to require further monitoring or remediation.

1 Introduction

In 2006, OTEK Australia Pty Ltd (OTEK) was retained by Melbourne Water to report upon environmental investigations undertaken within Riverwalk Sub-Area 4A located at New Farm Road in Werribee, Victoria (site). The site is part of the larger Riverwalk Area 4, which is divided into Sub-Areas A through I. Sub-Areas B through I are summarised in separate reports. The site layout, relevant boundaries, sample locations and surrounding geographic area is illustrated in the attached Figures 1 to 6/6A.

A 53X Statutory Environmental Audit is to be undertaken on the site in accordance with the Environmental Protection Act 1970 with a goal to obtain a Certificate of Environmental Audit. The Audit is being carried out by Dr Fouad Abo of GHD Pty Ltd, an appointed Victorian Environmental Protection Authority (EPAV) Environmental Auditor.

1.1 Background

Riverwalk Area 4 is surplus to Melbourne Water's requirements at the Western Treatment Plant and is to be sold for residential subdivision as part of an urban redevelopment project being carried out by Places Victoria (formerly VicUrban). The various investigation and sampling works undertaken across Sub-Area 4A have been commissioned by Melbourne Water as part of this project. Other Sub-Areas will be reported separately.

1.2 Purpose and Scope

The purpose of this report is to summarise the assessment activities completed in Sub-Area 4A between 1993 and October 2010 and assess the suitability of the site for the proposed residential use. The following information is presented:

- Periods of investigation and sampling events undertaken in Sub-Area 4A;
- Results of Sub-Area 4A soil investigation works, including adopted site criteria exceedances which may require further investigation and/or remedial action; and
- The condition of the site with respect to the Audit.

2 Site Details

Site details are summarised in Table A.

Table A: Site Details

Detail	Site-Specific Information: Sub-Area 4A
Address	New Farm Road, Werribee, Victoria
Shape and Area	The site is an irregularly shaped parcel of approximately 5.887ha
Certificate of Title	Contained within Volume 11367, Folio 778
Zoning	Residential Zone 1 (R1Z)
Site Setting	The site is primarily vacant, undeveloped land. A dense tree line exists to the north of the site and acts as a buffer to the Princes Highway.
Current Site Infrastructure	A recently drained man-made pond is present near the northwest corner of the site. Three asphalt paved roads and two asphalt paved car parks are located in the southern half of the site.
Topography	Site and surroundings are generally flat
Boundary	The boundary of the site was initially formed based on land use and on the location of buildings, roads, infrastructure, and potential contamination sources. In November 2007, the original boundary of Sub-Area 4A was changed to include part of Area 1 to the south and to excise the Melbourne Water Discovery Centre and New Farm Road (Area 5) to the east. As a result, the site area was reduced from 8.1 to 5.887ha. Current site boundaries are illustrated in Figure 2. A figure showing the original boundaries of Sub-Area 4A and of Riverwalk Area 4 is included as Appendix A.
Surrounding Land Uses	North – Princess Highway and New Farm Road (Area 5) East – New Farm Road (Area 5) South – Area 2 West – Melbourne Water Discovery Centre and operations buildings (Area 1)
Site Corner Coordinates (MGA 94 Zone 55)	**Easting** / **Northing** 292,620.50 / 5,801,144.60 292,686.82 / 5,801,256.99 292,739.24 / 5,801,226.11 292,754.36 / 5,801,208.31 292,932.80 / 5,800,845.02 292,953.59 / 5,800,808.98 292,962.24 / 5,800,792.64 292,811.22 / 5,800,718.87 292,778.83 / 5,800,719.06 292,781.00 / 5,801,049.91

Pertinent site details are summarised below. The site layout is illustrated in Figure 2.

2.1 Site Structures Present in 2006

The following is a complete list of items that were present at the site during OTEK's involvement. All items have now been removed. Historical items that were no longer present in 2006 are presented in section 3.3.

- Septic and soak pit – In July 2009, the remains of the septic and soak pit were removed from the site by Enviropacific Services Pty Ltd (Enviropacific) and the underlying soil validated by OTEK.
- Concrete slab – In July 2009, the concrete slab was removed from the site by Enviropacific and the underlying soil validated by OTEK. The concrete slab was associated with a former workshop.
- Underground asbestos pipe associated with a former watering system and servicing a hydrant – In October 2010, the pipeline was removed from by Enviropacific and the underlying soil validated by OTEK.
- Roads, car parks and man-made pond – Grid pattern samples were collected from within the footprint of each of these.

Currently, there is no known surface or sub-surface RAAF associated infrastructure present within the boundaries of Sub-Area 4A. The roads, car parks and man-made pond remain. Past infrastructure is illustrated in Figure 3.

2.2 Current Surface Conditions

The majority of the site is vacant and grass covered. The exceptions to this are two east-west trending asphalt sealed roads and one connecting north-south trending asphalt sealed surface road all in the south half of the site. There are also two asphalt sealed car parks attached to the north-south trending road.

A drained, man-made pond is present near the northwest corner of the site. The Sub-Area 4A/4I boundary bisects the pond. The entire pond is approximately 7,260m^2, with approximately 4,160m^2 of this within Sub-Area 4A.

At the time of environmental site assessment (ESA) fieldworks, no surface debris was observed at the site. The fenced off shrub lined sections at the south and north boundaries of the site are filled with a thick cover of native shrub.

3 Site History and Past Investigations

Desktop and field investigations completed for Sub-Area 4A have included historical research, geological and hydrogeological evaluations, field sampling within potential areas of concern and geophysical explorations. Results have been used to assess the nature, extent and source of potential areas of contamination, as well as the associated risks. Results have been presented in the following reports:

- *Environmental Site Assessment* (SKM, 1993);
- *Archaeological and Cultural Heritage Survey* (Biosis,2000);
- *Review of World War II Era Military Activity at Werribee Fields* (Milsearch, 2000);
- *Sub Surface Survey Report* (Enterra Pty Ltd, 2001);
- *Phase One Report – Werribee Fields, Werribee* (OTEK, 2002); and
- *Site Re-Establishment Validation Assessment* (WSP Australia, 2007).

OTEK does not have access to the 1993 SKM report which presents soil sampling conducted within Area 4, and therefore cannot comment on the relevance of that data to Sub-Area 4A. Consequently, the SKM data is not referenced further in this report.

3.1 Historical Site Uses

Historical site uses as documented in the above reports are outlined below:

- During the late 1800s and early 1900s the site and surrounding area was largely utilised for agriculture and sheep grazing;
- Between circa 1942 and 1952, Royal Australian Air Force (RAAF) occupied a small area in the northwest part of the site. The RAAF built sleeping huts, officers antechamber, ablutions, latrines, and a workshop on the site. Refer to Figure 3;
- From the early 1950s until the late 1970s the site was used primarily for agriculture. This included cropping in winter and grazing in summer;
- In the late 1970s Melbourne Water began operating at the site and by 1979 the man-made pond and some of the roads and car parks are built; and
- In 2008/09 the man-made pond was drained by Melbourne Water due to water restrictions.

Other than the draining of the pond, there have been no significant changes in use since the late 1970s.

3.2 Historical Aerial Photograph Review

A detailed review of historical aerial photographs was completed to identify former land uses, to ascertain if the land had ever been irrigated with treated effluent and to evaluate the need for further sampling to target historical potentially contaminating activities.

Aerial photographs from 1964, 1973, 1979, 1984, and 2004 were reviewed at the Department of Sustainability and Environment (DSE) – Land and Survey Information Centre. All aerial photographs reviewed are attached as Appendix B.

- **1964** - Sub-Area 4A is unoccupied. A number of trees have been planted along the northern boundary of the site. Hangers are present to the east, northeast and southeast of the site.
- **1973** - This photograph, taken during the Werribee Floods, shows the site as a semi-flooded area. Surrounding land uses have not changed significantly.

- **1979** - There are significant changes to the area surrounding the site when compared to the 1973 photograph. The Melbourne Water Discovery Centre and operations building including associated car parks and roads are under construction; to the west of Sub-Area 4A. A pond has been excavated and is partially located within the Sub-Area 4A boundary. New Farm Road is located to the east of the site. The area to the southwest of the site (Sub-Area 4C), appears to have been used for crop cultivation.
- **1984** - Two service roads allowing direct access from the discovery centre and operations building to New Farm Road have been sealed. Two car parks servicing the Discovery Centre and operations building have been constructed.
- **2004** - No significant changes since 1984.

The historical aerial photographs did not provide any evidence to suggest that there was any RAAF activity post 1964.

3.3 Past Site Structures

The structures listed below were not present during OTEK's investigations, but are known to have been present in the past:

- Two sleeping huts;
- Officers antechamber;
- Ablutions;
- Latrine; and
- Workshop.

The location of these structures was originally presented in Milsearch's 2000 *A Review of World War II Era Military Activity* at Werribee Fields report (Milsearch, 2000).

There are currently no known existing surface or sub-surface structures in Sub-Area 4A. Past infrastructure is illustrated in Figure 3.

3.4 Geophysical Investigation

In their 2000, *A Review of World War II Era Military Activity at Werribee Fields* report, Milsearch identified the potential for there to be buried unexploded ordinance (UXO) such as small arms ammunition within Area 4. In response to this, Enterra Pty Ltd (Enterra) completed a geophysical of Area 4 sometime between 2000 and 2001. The survey did not identify any UXO or potential burial sites Sub-Area 4A (Enterra, 2001).

3.5 Summary of Site History

The site and surrounding area was used for agriculture at various times between the late 1800s and the late 1970s. Potential environmental impacts associated with this use are presented in Section 5.

From approximately 1942 to 1952 the RAAF occupied a small part of the site, with two sleeping huts, an officers antechamber, a workshop and ablutions, latrine and associated septic and soak pit. There was also an underground asbestos pipe associated with a former watering system.. The ablutions, latrine and workshop were removed prior to OTEK's initial involvement at the site in 2006. Between July 2009 and October 2010, OTEK removed the underground septic and soak pit, a concrete slab that had supported the workshop, and the underground pipe. Potential environmental impacts associated with this infrastructure is presented in Section 5.

The results of multiple lines of evidence which include extensive test pitting, soil sampling and a geophysical search all indicate that no infrastructure remains.

A man-made pond which is currently dry is also present. This pond has been assessed, which is discussed in more detail in section 6.

Melbourne Water currently occupies the larger Riverwalk area. No Melbourne Water associated activities occur at the site and no potential sources of contamination associated with Melbourne Water have been identified.

4 Geology and Hydrogeology

4.1 Geological Setting

The Geological Survey of Victoria 1:63,360 series geological map 'Melbourne' sheet indicates that the site is underlain by:

- 0 to 15 metres (m) - Quaternary Age Deutgam Silt comprised of grey to grey-brown silt with abundant carbonate nodules and some gravel; trending to sand and silty sand;
- 15 to 55m - Quaternary Age Newer Volcanics Formation comprised of dark grey to light grey olivine basalt;
- 55 to 75m - Brighton Group Formation sand; and
- >75m - Newport Formation marine sediments.

The following approximate soil profile is based on OTEK observations made during subsurface investigation works into natural soil:

- 0 to 0.1 metres below ground surface (mBGS) - grass covered top soil comprised of brown, soft, moist, silty clay;
- 0.1 to 0.5mBGS - yellowish brown silt with occasional bands of soft, high plasticity clay; and
- 0.5 to 1.0mBGS - dark yellowish orange, stiff, moist, medium plasticity clay.
- 1.0 to 8.0mBGS - dark dark reddish brown, hard, dry, high plasticity clay.
- 8.0 to 16mBGS - light brownish grey, weathered basalt.

The following approximate shallow profile is based on observations made during the excavation of six test pits into fill material located near man-made structures:

- 0 to <0.5mBGS - road base gravel and sand with shells.

All soil encountered was logged in accordance with the United Soil Classification System (USCS). Test pit logs outlining subsurface conditions are attached as Appendix C. Please refer to these logs for additional information and for information specific to each test pit.

4.1.1 Deutgam Silt Background Concentrations

Deutgam Silt contains background concentrations of barium, manganese, nickel and vanadium exceed National Environment Protection Measure (NEPM) Interim Urban Ecological Investigation Levels (EILs). Elevated values of these constituents in soil can therefore be attributed to natural conditions of the silt, and are not necessarily linked to any known anthropogenic influences. Table C presents Sub-Area 4A results for these metals and compares them to the published EILs and background ranges:

Table B: Background Soil Concentrations in Sub-Area 4A Grid Samples

Metals	Sub-Area 4A	NEPM Background Range	EIL	CONCENTRATION RANGES REPORTED IN OTHER WERRIBEE RIVERWALK SUB-AREAS (GRID)				
				4C	4F	4B	4G	4I
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Barium	20 - 540	100 - 3000	300	9 - 580	23 - 420	27 - 220	48 - 330	40 - 460
Manganese	90 - 396	850	500	2 - 410	110 - 760	120 - 780	93 - 410	128 - 510
Nickel	15 - 58	5 - 500	60	14 - 54	11 - 31	13 - 120	15 - 40	21 - 49
Vanadium	22 - 53	20 - 500	50	16 - 63	12 - 66	17 - 62	5 - 60	32 - 69

Background metals are discussed further in sections 9 and 13.

4.2 Hydrogeological Setting

The information presented in this section has been sourced from OTEK groundwater monitoring events at the site and from *Port Phillip Region Groundwater Resources – Future Use and Management* report by John Leonard.

The Newer Volcanics and Brighton Group formations are the two primary aquifer systems in the vicinity of the site. The Deutgam Silt discussed in the previous section is not expected to constitute a significant aquifer system in the vicinity of Sub-Area 4A. Based on depth to water measurements collected during groundwater monitoring events, groundwater flow is in an easterly direction towards the Werribee River, located approximately 1km from the site. A discussion of the two primary aquifer systems is provided in the following sub-sections.

Pertinent hydrogeological data for Sub-Area 4A is presented below.

4.2.1 Werribee Delta Aquifer

The Werribee Delta is an unconfined to semi-confined shoe-string aquifer located near the mouth of the Werribee River, where it discharges to Port Phillip Bay. The stratigraphy of the formation, predominantly clay and silt with sand and gravel lenses, results in varying hydraulic conductivities.

Bore yields in this aquifer range up to 15 litres per second (L/s) but are generally less than 5L/s. Groundwater quality ranges from 500 to 6,000mg/L total dissolved solids (TDS), with the lower TDS occurring within the coarser lenses.

Recharge of the aquifer is primarily from rain water and irrigation infiltration. Some evidence also suggests that an upward component of the underlying Newer Volcanics aquifer may add to the recharge. Discharge is to the Werribee and Little Rivers, and to Port Phillip Bay.

4.2.2 Newer Volcanics Aquifer

The Newer Volcanics Aquifer covers an area more than 20 times that of the Werribee Delta Aquifer. It is a fractured basalt aquifer with interbedded clay aquitards. The shallow parts of the aquifer are unconfined

while the deeper parts range from semi-confined to confined. Water occurs in fractures and vesicular voids. Hydraulic properties vary widely depending on the condition of the basalt.

The formation is generally outcropping, though at the site it underlies the sediments of the Werribee Delta. Bore yields in this aquifer range up to 40L/s but are generally less than 1.2L/s. Groundwater quality ranges from 100 to 6,000mg/L TDS. The chemistry is largely dependent on the state of weathering of the surrounding basalt.

Recharge of the aquifer is primarily from rain water infiltration and streams. Published results indicate that groundwater flow in this aquifer is generally to the south where it discharges at Port Phillip Bay.

5 Conceptual Site Model

A conceptual site model (CSM) has been completed to assist in identifying pollution linkages at the site. There are three components required to complete a pollution linkage; source, pathway and receptor. Details of the CSM are presented below.

5.1 Source

5.1.1 On-Site

Table C summarises the potential on-site contamination sources that have been identified based on historical land uses and lists the contaminants of potential concern (COPC) associated with each.

Table C: Sub-Area 4A Historical Uses, Potential Contamination Sources and COPC

Historical Site Uses	Potential Contamination Sources	COPC
RAAF above ground and subsurface infrastructure	• septic and soak pit; • latrine; • ablutions; • workshop; and • underground asbestos pipe.	Metals, organochlorine pesticides (OCPs), organophosphate pesticides (OPPs), total petroleum hydrocarbons (TPHs), polycyclic aromatic hydrocarbons (PAHs) phenols, semi volatile organic compounds (SVOCs), cyanide, fluoride, ammonia, nitrate, nitrite, asbestos, *E.coli*, and pH.
Agriculture, farming, grazing and general	Nonspecific.	Metals, OCPs/OPPs, asbestos, pH, nitrate, nitrite and ammonia.

The analytical suites adopted for Sub-Area 4A were based on these identified COPC.

In accordance with the approved SAP, ammonia, nitrate and nitrite analysis was not conducted on grid samples. The rationale is presented in the SAP and includes the absence of detections of these analytes in adjacent areas. Targeted samples were analysed for ammonia, nitrate and nitrite, and this would be expected to represent the highest likely concentrations of these analytes and therefore be adequate for assessing the site.

5.1.2 Off-Site

Table D summarises the potential off-site contamination sources that have been identified based on historical land uses and lists the COPC associated with each.

Table D: Potential Off-Site Contamination Sources

Historical Off-site Land Uses	Potential Contamination Sources	COPC
Fuel Storage	Suspected Area 5 UST.	Metals, TPH, benzene, toluene, ethylbenzene, total xylenes (BTEX), PAH, phenols, SVOC.
Fuel Storage	Former Area 1 UST.	
RAAF aboveground and subsurface infrastructure - Sub-Areas 4B and 4H	Hangars and septic systems.	Asbestos, heavy metals, fluoride, *E.coli,* ammonia, nitrate, asbestos and pH.
Agriculture, Farming and Grazing	Nonspecific.	Ammonia, nitrate and nitrite.
Riverwalk Area 2	Nonspecific / background.	Arsenic.

The two UST locations would have been inside of Sub-Area 4A according to the 2007 boundaries. Based on current boundaries the locations are within Area 1 and Area 5.

5.2 Pathway

The following potential pathways have been identified:

- **Human - Direct and Indirect:**

  Dermal contact with impact soil and or groundwater;
  Ingestion of impacted soil and or groundwater;
  Inhalation of impacted dust; and
  Consumption of vegetables grown in impacted soil and/or irrigated with impacted groundwater.

- **Ecological:**

  Groundwater migration to a surface water body; and
  Groundwater migration to the site.

5.3 Receptor

The following potential receptors to on-site contamination have been identified based on the above listed sources and pathways:

- **On-site Receptors:**

  On-site workers and future residents.

- **Off-site Receptors:**

  Residential properties located east of the site across Farm Road; and
  The Werribee River, located approximately 1km east of the centre of the site.

5.4 CSM Analysis

5.4.1 On-site

There is potential for all identified sources and COPC to be impact the identified on-site receptors. On-site groundwater also has the potential to migrate off-site. This report summarises the assessment work completed to investigate each of these potential pollution linkages.

5.4.2 On-site

These potential off-site sources are discussed below:

- **Fuel Storage (adjacent Area 1 and Area 5):** The UST in Area 1 has since been removed by OTEK and the underlying soil validated. No hydrocarbon contamination was identified and no remediation works were completed or required. Further detail is available in OTEK's 2009 *Riverwalk Area 1 – UPSS Removal & Validation* interim report.
- The suspected UST in Area 5 was first identified in the Milsearch report, however no specific details were provided. In December 2010, OTEK completed over 200m of trenching to a depth of 0.5mBGS. This depth is considered to be deep enough to identify either a UST or tank pit backfill. No evidence of a UST was uncovered. It has been concluded that no UST was present at this location. Multiple lines of evidence used to reach this conclusion are presented in more detail in OTEK's 2012 DRAFT *Environmental Site Assessment, Riverwalk Area 5* report.
- Groundwater monitoring wells MW-7 and MW-8 were installed in Sub-Area 4A to investigate potential groundwater impacts associated with past off-site fuel storage. Groundwater assessment is discussed further in section 7. The search for the Area 5 UST will be discussed in more detail in the Area 5 report.
- **RAAF Infrastructure:** A hydrogeological assessment of Area 4 found Sub-Areas 4B and 4H to be down gradient of Sub-Area 4A. Therefore, the potential for contamination sources from 4B or 4H to migrate to Sub-Area 4A is low.
- **Agriculture, Farming and Grazing:** Applicable to all of the Riverwalk area and therefore ammonia, nitrate and nitrite are potential on-site and off-site contaminants.
- **Riverwalk Area 2:** Elevated arsenic concentrations, with a mean value of approximately 25mg/kg, have been identified in the eastern section of adjacent Area 2 (OTEK, 2002). A large proportion of the arsenic concentrations were within NEPMs published natural background range of 1 to 50mg/kg for Australian soils, and are consistent with arsenic concentrations reported in other Riverwalk areas where potential contamination sources have not been identified. Furthermore, the arsenic identified does not coincide with elevated copper or chromium concentrations, indicating that the arsenic is not associated with the use or disposal of chromate, copper and arsenate) within Area 2. Arsenic has not been identified in groundwater. The potential for arsenic concentrations to have migrated to Sub-Area 4A through wind and stormwater action is considered to be low.

Based on the above CSM analysis, the only off-site source with a potential pathway for impacting on-site receptors is the past fuel storage. Monitoring wells MW-7 and MW-8 were installed to investigate this potential pollution linkage. re are no off-site contaminant sources likely to migrate to and/or impact the site.

As the agriculture, farming, grazing use is applicable on- and off-site, it is discussed and analysed for as part of the on-site scope of work, on-site targeted samples were analysed for these constituents. This is in accordance with the approved SAP.

CSM diagrams showing past sources and receptors and current/future sources and receptors are provided as Appendix D.

6 Soil Assessment

Soil assessment activities were completed within Sub-Area 4A between April 2008 and October 2010. The assessments were developed to provide a distribution of sample locations across the site that would ensure adequate coverage in accordance with national guidelines and site-specific observations.

Soil sampling was undertaken in accordance with the following guidelines and standards:

- Australian Standard AS 4482.1 (2005) *Guidelines to the sampling and investigation of potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds.*
- Australian Standard AS 4482.2 (1999) *Guidelines to the sampling and investigation of potentially contaminated soil – Part 2: Volatile substances.*
- National Environment Protection Council (1999) The National Environment Protection (Assessment of Site Contamination) Measure (NEPM); and
- Department of Health (2009) Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia.

6.1 Summary of Soil Investigations

Soil investigations are summarised in Table E.

Table E: Sub-Area 4A Soil Investigations

Item	Assessment / Investigation	Date	Samples	Observation / Reference
1	Detailed Site Investigation (DSI) Grid Sampling: To Address Australian Standards Requirements and Auditor Comments.	April 2008.	4A/G1 – 4A/G62. 4A/C1 – 4A/C48. Grid locations = 62. Grid samples analysed = 62. Composite samples analysed = 43	See Bore Logs 4A/G1 to A4/G62. Grid sample locations are shown in Figure 4. Composite sample locations are shown in Figure 5.
2	Detailed Site Investigation (DSI) Target Sampling: To target the former workshop, ablutions and latrine and existing septic and soak pit and concrete pad.	April 2008 & February 2009.	4A/T5, A4/T1A, A4/T2A, A4/T3A, A4/T1B, A4/T2B, A4/T3B. Sample locations = 7.	See Bore Logs 4A/T5, A4/T1A, A4/T2A, A4/T3A, A4/T1B, A4/T2B, A4/T3B. Target sample locations are shown in Figures 6 and 6A.
3	Investigation of soil profile beneath man-made pond.	February 2009.	No samples collected.	20m of trenching to a depth of 0.6mBGS and three separate test pits to a depth of 1mBGS were carried out to investigate subsurface conditions. Investigation locations are shown in Figure 6.
4	Soil Bore Sampling / Monitoring Well Installation: Suspect UST in Area 5 (no UST found) UST in Area 1 (now removed).	February 2009 and October 2009.	Two sample locations: • 4A/MW-7 = targeting suspect UST in Area 5. • 4A/MW-8 = targeting UST in Area 1. MW-7 samples analysed = 13. MW-8 samples analysed = 4.	See Bore Logs 4A/MW-7 and 4A/MW-8. Monitoring well locations are shown in Figure 6.

Item	Assessment / Investigation	Date	Samples	Observation / Reference
5	Infrastructure Removal / Validation: To remove and validate the septic and soak pit and concrete slab and underground asbestos pipe.	July 2009 and October 2010	Septic validation: 4A/T5/VS-1 to 4A/T5/VS-5. Soak pit validation: 4A/VS-1 and 4A/VS-2. Concrete slab validation: 4A/VS-3 and 4A/VS-4. Sample locations = 9. Samples analysed = 9. Underground asbestos pipe validation: 4A/VS-6 and 4A/VS-7 Sample locations = 2. Samples analysed = 2.	Excavation areas, concrete slab outline and validation sample locations are illustrated in Figures 6 and 6A.

OTEK oversaw all investigation/sampling works and collected all samples.

6.2 Sampling Analysis Plan

All assessments completed at the site followed the methodologies initially presented in:

- OTEK's 22 January 2008 Sampling Analysis Plan report. The Auditor reviewed this plan and provided comments to OTEK on 22 February 2008. These comments were incorporated into OTEK's revised 27 March 2008 Revised Sampling Analysis Plan (SAP). A 10 April 2009 e-mail from the Auditor specified additional sampling requirements which were subsequently incorporated into the Sub-Area 4A field investigation. The revised SAP, along with all relevant correspondence, is attached as Appendix E. The revised SAP was prepared to develop methodologies for intrusive soil and groundwater investigations within Sub-Area 4A. The sampling pattern and sample collection methodologies adhered to during the Sub-Area 4A works are outlined in this section;
- OTEK's 13 May 2009 Riverwalk Area 4 Scope of Works for the Removal and Validation of Site Infrastructure and Buried Debris; and/or;
- OTEK's 19 May 2009 Revised Analytical Suite Request, Infrastructure & Buried Debris Removal Works and subsequent correspondence (1 June 2009 and 9 June 2009).

Any sampling that is referred to in the revised SAP, but which occurs outside of Sub-Area 4A, will be addressed in separate summary reports specific to those areas.

6.2.1 Sampling Strategy

The sampling strategy proposed in the revised SAP was developed incorporating two approaches; target sampling and grid pattern sampling. The approaches provide a sampling frequency considered appropriate to meet the minimum requirement set out in Australian Standard AS4482.1:

1. **Grid Sampling** – This was proposed as a systematic approach for providing a broad characterisation of soil conditions. In accordance with AS4482.1, the first sampling point was positioned randomly and the locations of subsequent sampling points were determined using a surrounding 36m x 36m grid pattern. Some grid samples were also incorporated into composite samples. This is discussed in more detail in section 6.3.1.

2. **Target Sampling –** This was proposed to specifically target the former infrastructure which had been identified as potential sources of contamination. The infrastructure included a septic and soak pit, former ablutions and latrine, and a former workshop. A concrete pad associated with the former workshop was still present. Target sample locations were determined using a judgmental sampling pattern as specified in AS4482.1.
3. **Soil Boring/Monitoring Well Installation –** Two groundwater monitoring wells were installed to investigate potential impacts associated with one former off-site UST and one suspected off-site UST. Soil samples were collected during the installation of the wells. The suspected UST was not identified following extensive explorative works and is considered to not have been present.

Soil samples were generally collected from 0.10mBGS and from between 0.25 to 2.0mBGS to characterise the shallow soil. The exception was the soil borings, where soil samples were collected from up to 16mBGS and analysed up to 12mBGS. At each investigation location, the near-surface soil sample was submitted for laboratory analysis. Samples collected between 0.25 and 2.0mBGS were either submitted to the laboratory, or kept on hold pending a review of the shallower sample results.

Samples were also collected when lithology changes were noted and when potential soil contamination was observed.

6.2.2 Sample Collection Methodology

As per the revised SAP, test pits were completed using a back-hoe or excavator. Samples were then collected directly from a hand auger, pick or shovel. To prevent cross-contamination, tools were decontaminated and new disposable gloves were worn between samples. To minimise the loss of volatiles, samples were placed directly into jars and packed tightly to minimise headspace. Headspace was also minimised during groundwater collection by filling sample collection bottles completely.

For the two soil borings completed as monitoring wells, soil samples were collected from lined direct push tubes. This method prevents cross-contamination and preserves volatiles by collecting an undisturbed sample. Direct push was used until basalt was encountered, then the whole was reamed out using hollow flight augers to the depth of basalt and completed with hammer drilling to the total depth of the well. Samples were collected from the basalt during hammer drilling in B-7. This is not best practice for environmental sample collection; however as there were no identified contamination sources or suspected COPC at these depths the sampling does not impact the conclusions of the report.

Soil and groundwater samples were immediately placed on ice following sampling for transport to the primary or secondary analytical laboratory for testing.

6.2.3 Analytical Suite

The analytical suite adopted within Sub-Area 4A is summarised below.

Table F: Analytical Suite

Sample Type	Potential Source	Analytical Suite	Comments
Grid/Composite	Agriculture, farming, grazing and general.	Metals, PAH, TPH, OCP, OPP, asbestos, pH and Vic EPA Screen.	As per a request by the auditor, ammonia, nitrate and nitrite have been added to the list of COPC in Table C. These analytes were not part of the analytical suite in the SAP and were not analysed for during grid sampling. As these analytes were analysed for during the target and validation sampling, where the highest likely concentrations would be found, the results are considered sufficient to appropriately assess the conditions of the site. This does not constitute a deviation from the SAP. Aside from the above listed analytes, the analytical suite includes all COPC identified, plus the Vic EPA Screen. The additional analytical results provide further supporting evidence on the condition of the site. This does not constitute a deviation from the SAP. Composite sampling was conducted on pH and PAH. While it is acknowledged that this was not discussed in the SAP and may not have been appropriate in all instances, the results have been included in this report as an additional line of evidence and should be viewed in association with the results for the individual samples. As the composite results for PAH and pH are similar to the individual results, the composite results are considered an additional line of evidence supporting the conclusions reached from evaluation of the individual results.
Target and/or Validation	Former ablutions.	**Target:** metals, OCP, OPP, TPH, PAH, phenols, total cyanide, fluoride, ammonia, nitrate, nitrite, asbestos, *E.coli*, pH, SVOC and Vic EPA screen. **Validation:** metals, OCP, TPH, PAH, ammonia, nitrate, nitrite, *E.coli*, coliform, sulphate, pH and asbestos.	The target analytical suite includes all COPC identified, plus nitrite and the Vic EPA Screen. The additional analytical results provide further supporting evidence on the condition of the site. This does not constitute a deviation from the SAP. The validation analytical suite does not included SVOC, phenols, total cyanide,or fluoride. Given the results of grid and target sampling which show that none of these analytes are present at concentrations that would present an unacceptable human health or ecological risk, not including them in the validation analytical suite does not impact on the conclusions of the report. Aside from the above listed analytes, the validation analytical suite includes all COPC identified, plus coliform and sulphate. The additional analytical results provide further supporting evidence on the condition of the site. The SVOC suite includes phenoxy herbicides, phthalates, polychlorinated biphenyls (PCB). These analytes have not been listed separately as COPC, but are presented separately in the analytical table. There is no analytical table specific to SVOCs.
	Former latrine.		
	Septic and soak pit – removed during infrastructure removal works.		
	Former workshop. The associated concrete pad was removed during infrastructure removal works.		
	Underground asbestos pipe - removed during infrastructure removal works.	Asbestos.	None.

Sample Type	Potential Source	Analytical Suite	Comments
Soil Boring/Groundwater Monitoring Well	Suspected Area 5 UST. Not found and no longer considered likely to have been present.	Metals, TPH, BTEX, PAH, phenols, OCP, OPP, SVOC and Vic EPA Screen.	The target analytical suite includes all COPC identified, plus metals, OCP, OPP and the Vic EPA Screen. The additional analytical results provide further supporting evidence on the condition of the site. This does not constitute a deviation from the SAP. The SVOC suite includes phenoxy herbicides, phthalates, polychlorinated biphenyls (PCB). These analytes have not been listed separately as COPC, but are presented separately in the analytical table. There is no analytical table specific to SVOCs.
	Former Area 1 UST.		

In a 10 April 2008 e-mail to OTEK, the Auditor provided correspondence requesting the following frequency of analysis be adhered to during field assessment works:

- Vic EPA Screen (now the Industrial Waste Resource Guidelines (IWRG) 621 screen) for 5% of samples analysed;
- PAHs for 50% of samples analysed;
- TPHs for 50% of samples analysed. This was applied to grid samples only. Composite samples were not analysed for TPH;
- OPPs for 25% of samples analysed;
- OCPs for 25% of samples analysed;
- pH for 25% of samples analysed;
- Asbestos for 50% of samples analysed. The Auditor requested that this sampling frequency be increased in any areas where asbestos is likely to be present. This sampling frequency was included in the revised SAP; and
- The full analytical suite for 25% of natural soil samples. In a telephone conversation held on 10 April 2008, it was agreed between OTEK and the Auditor that composite sampling would be conducted to achieve this.

Not all samples were necessarily analysed for the entire analytical suite. Refer to the analytical tables for more detail. Some samples were collected and put on hold and therefore not analysed. All analysed samples are reported in the analytical tables. The sampling densities referenced refer to the samples analysed, not the samples collected. More detail on which samples were analysed and which put on hold and not analysed is provided in the attached analytical tables.

6.2.4 Field Screening

As per the revised SAP, samples were field screened for volatile organic compounds (VOCs) using a portable photoionisation detector (PID). In accordance with the manufactures guidelines, OTEK personnel performed a zero calibration of the PID in fresh air at the beginning of each sampling day. The post zero calibration fresh air PID reading was then recorded. A span gas calibration was then completed using 100 parts per million (ppm) isobutylene. PID VOC readings did not exceed 1.8ppm at any sampling location. The PID readings following the zero and span gas calibration are presented in Appendix F.

The process used for the field screening of soil samples collected in Sub-Area 4A is as follows:

1. A subsample from each location and depth was sealed into a plastic bag immediately upon retrieval to minimise volatile losses to the atmosphere;
2. The sealed subsample was then left for 5 minutes to equilibrate; and
3. The bag was then punctured using the tip of the PID probe to obtain a sample of the head-space gases.

Due to human error, PID screening was not conducted at grid test pits 4A/G2, G4, G15 to G17, G21 to G24, G30, G36 and G38 or at targeted test pit 4A/T3B. It is considered unlikely that any volatile contamination would have been missed due to the following multiple lines of evidence:

1. the grid test pits were not targeting any suspected sources of hydrocarbons or other volatiles;
2. the targeted test pit was targeting septic system infrastructure which is not a suspected source of hydrocarbons or any other volatiles; and
3. there was no visual or olfactory evidence of hydrocarbons or any other volatiles at any of the test pits listed.

The oversight therefore does not impact the conclusions of the report. The field screening results are included on the test pit and soil boring logs.

6.3 Soil Investigations

Sub-Area 4A soil sampling was carried out in compliance with the revised SAP to ensure adequate coverage and distribution across the site in accordance with national guidelines and site-specific observations. The Sub-Area 4A investigations are summarised in Tables E and F.

Sixty-two test pit grid based sampling points were completed in Sub-Area 4A. This equates to 10.5 sampling points per hectare, which OTEK considers to adequately meet the Australian Standard 4482.1 – 2005 recommended density of 11 for a 5 ha site.

As outlined in Table E, investigations were also undertaken in Sub-Area 4A that did not involve the collection of soil samples. All investigation events are discussed in sections 6.3.1 to 6.3.5. Results are presented in section 9 and discussed in section 13.

The geology encountered was as presented in section 4. The analytical tables identify any samples that were collected in fill. Some fill material encountered was reworked natural material and therefore not a likely source of unknown COPC. Refer to the attached test pit logs for more detail.

Where backfilling was required, material sourced from Cemex Werribee Quarry (formerly Readymix Werribee Quarry) located at Wests Road in Werribee was imported. This material has earlier been deemed suitable for use to backfill any excavations located in Areas 4. Additional information is provided in the following OTEK documents which can be found under separate cover:

- Riverwalk – Imported Fill Material Stockpile Sample Results, August 2007;
- Readymix Quarry Preliminary Site Assessment dated June 2008; and
- Riverwalk – Imported Fill Material Stockpile Sample Results, September 2009.

Because some of the activities ran concurrently or took place over a span of months, it is difficult to present all details in a strict chronological order. However, a chronological order is followed as judiciously as is possible.

6.3.1 Grid Based Sampling

Between 7 and 15 April 2008, sixty-two grid based test pits were excavated, logged and photographed across Sub-Area 4A. In accordance with the revised SAP, samples were collected from 0.25, 0.5 and 1.0mBGS at each location. In addition, a 0.1mBGS sample was collected from both 4A/G14 and 4A/G41 due to the presence of fill material. A total of 188 grid based soil samples from discrete depths were therefore collected. Of these, 62 individual soil samples were submitted for laboratory analysis.

Forty-eight three-part composite samples were formed from a selection of 144 individual grid samples collected from 48 different test pits. Of these 43 were analysed. Composite sampling was conducted to provide a broad understanding of the analytical data and to maximise site coverage while reducing cost in the analytical program. The composite samples were made up of subsamples collected from matching depths and similar geological conditions where no potential sources of contamination were identified. The samples were composited by the laboratory.

Composite sampling was conducted on pH and PAH. While it is acknowledged that this was not discussed in the SAP and may not have been appropriate in all instances, the results have been included in this report as an additional line of evidence and should be viewed in association with the results for the individual samples. As the composite results for PAH and pH are similar to the individual results, the composite results are considered an additional line of evidence supporting the conclusions reached from evaluation of the individual results.

The suite of contaminants analysed for during the grid sampling is summarised in Table F. Refer to Figure 4 for the grid sample locations.

6.3.1.4 Investigation of Fill

Fill material observed during site assessment works was generally located at depths of less than 0.5mBGS and was associated with nearby man-made structures. It is noted that no anthropogenic debris was identified in any of the test pits, borings or trenches.

Fill identified in Sub-Area 4A consisted of sand with shell fragments in bores 4A/G14, 4A/G15 and 4A/G18 and gravel road base in bores 4A/G40, 4A/G41 and 4A/G45. A sample was collected at 0.1mBGS in bores 4A/G14 and 4A/G41 to assess the two identified types of fill material.

A 0.25mBGS sample was also collected from 4A/G45 to assess the road base fill material. This sample was combined with the 0.25mBGS samples from 4A/G50 and 4A/G52 to make composite sample 4A/C37.

Given the collection and analysis of multiple fill samples, the rare occurrence of fill at the site, the absence of any visual, olfactory or field screening signs of contamination, the works are considered adequate to assess the condition of fill material that occurs at the site.

6.3.2 Targeted Sampling

On 17 April 2008, targeted test pit 4A/T5 was excavated, logged and photographed. The test pit was completed to target and assess soil conditions in the vicinity of the former workshop and the remaining associated concrete slab. Four individual soil samples from discrete depths (0.25, 0.5, 1.0 and 2.0mBGS) were collected from the test pit and submitted to the laboratory. The test pit was advanced until natural soil was encountered.

On 13 and 16 February 2009, additional targeted test pits were excavated, logged and photographed. Originally, three test pits were proposed. However, a Telstra optic cable was located below the intended target locations. To avoid potentially damaging the cable, the locations were adjusted so that instead of three test pits there was one test pit 1m to the north and one test pit 1m to the south of the original sample location. Consequently, six new target locations (4A/T1A to 4A/T3A and 4A/T1B to 4A/T3B) were excavated in lieu of the original three (4A/T1 to 4A/T3). The test pits were completed to target the septic and soak pit, ablutions and latrines. Four individual soil samples from discrete depths (0.25, 0.5, 1.0 and 2.0mBGS) were collected from each test pit and submitted to the laboratory. Test pits were advanced until natural soil was encountered.

Following a survey of the sampling locations, it was identified that the target samples did not match the location of the infrastructure targeted. As a result, the intended objective of the target sampling was not achieved. However, as presented in section 6.3.5, all infrastructure was removed and the underlying soil validated. Therefore, the overall objected of assessing impacts associated with infrastructure was achieved. No data gaps remain. Additionally, the target sample results provide an additional line of evidence on the overall conditions of the site.

The suite of contaminants analysed for during the targeted sampling is summarised in Table F. Refer to Figure 6A for the target sample locations. It is acknowledged that the sampling numbers are not in numerical order with date of sampling. As all samples have been accurately identified and reported, this does not impact on the conclusions of the report.

6.3.3 Investigation of Soil Profile below Drained Man-made Pond

During the grid pattern sampling, three grid pattern test pits (4A/G14, 4A/G15 and 4A/G18) were excavated within the footprint of the man-made pond. The geology encountered consisted of sand with shell grit from surface to approximately 0.2mBGS underlain by silt and clay to 1.0mBGS, the maximum extent of the test pitting. Following this, the Auditor requested additional work be completed to further evaluate the subsurface condition of the pond.

On 9 February 2009, Enviropacific excavated 20m of trench to a depth of 0.6mBGS and three randomly positioned test pits to a depth of 1.0mBGS, all within the boundaries of the pond. The soil encountered was generally consistent with the soil identified during the grid pattern sampling. Sand and gravel with shell grit was observed at the surface, underlain to approximately 0.6mBGS with low permeability imported clay fill. Given the difficulty with identifying silt and clay in the field, it is likely that this is the same material that was identified as silt during the grid sampling. The clay was underlain by natural silt identified across the site and the Riverwalk area. Refer to Figure 6 for the location of the trench and test pits.

During the grid sampling, the 0.5mBGS sample from each location was composited and analysed for a broad suite of COPC. The 0.1mBGS sample from 4A/G14 was also analysed for a Vic EPA Screen, and the 0.25mBGS sample from 4A/G18 was analysed for asbestos. No analytes were reported at concentrations that would present an unacceptable ecological or human health risk. Based on these results, on the absence of any visual or olfactory signs of contamination, and on the consistent subsurface conditions encountered during the additional pond investigation, no additional samples were collected during the second round of works. The objective of the exercise, which was to confirm consistent conditions across the pond, was achieved.

6.3.4 Soil Bore Sampling / Monitoring Well Installation

To assess potential contamination from the former Area 1 UST and suspected Area 5 UST, soil borings 4A/B-7 and 4A/B-8 were advanced and completed as monitoring wells MW-7 and MW-8, respectively.

Monitoring well MW-7 was installed on 9 February 2009. Monitoring well MW-8 was installed on 26 October 2009.

The soil borings were first advanced using direct push techniques then completed with hollow flight auger and hammer drilling. Thirteen samples were analysed from B-7 and four were analysed from B-8. The samples were collected from the surface to 16mBGS in B-7 and from the surface to 8mBGS in B-8.

Given the collection and analysis of multiple soil samples and the absence of any visual, olfactory or field screening signs of contamination, the works are considered adequate for assessing soil at the locations drilled.

The groundwater wells are discussed further in section 7.

6.3.5 Infrastructure Removal and Validation Sampling

This section presents details of the removal of a septic and soak pit, concrete slab and an underground asbestos pipe. Following the removal of these items, validation sampling was completed to ensure that in-situ soil remaining after the removal of all the infrastructure was not impacted by the relevant COPC.

The soil profile encountered during these works was consistent with the shallow geology already presented, with the addition of basalt gravel, cobbles and boulders associated with the septic and soak pit. PID screening was conducted during the removal of these items, with readings ranging from 0.0 to 0.9ppm. Visual and olfactory observations also did not identify any hydrocarbon or other volatiles. Given the items removed, there were no suspected sources of volatiles. The field screening confirmed this.

6.3.5.1 Septic and Soak Pit

In July 2009, Enviropacific used an excavator to remove the septic and soak pit. The septic consisted of buried basalt cobbles and boulders. The excavation continued until all basalt cobbles and boulders were removed and only natural soil remained. The excavation extended to approximately 3.3mBGS and was approximately 3m by 4m in lateral extent. A thin layer of basalt cobbles and gravel extending to approximately 0.1mBGS were also identified. These cobbles and gravel were present in an approximately 13m long ‘U’ shape pattern extending to the south of the septic. This has been identified as the soak pit. This area was scraped until all gravel and cobbles was removed.

Five validation samples (4A/T5/VS-1 to 4A/T5/VS-5) were collected from the walls (1.5mBGS) and base (3.3mBGS) of the septic excavation. Two validation samples (4A/VS-1 and 4A/VS-2) were collected from the base (0.1mBGS) of the soak pit scrape. The shallow depth of the scrape prevented the collection of wall samples. Given the approximate volume of the septic excavation of 8m^2 by 3.3m deep, the absence of any identified contamination and the fact that the septic consisted only of basalt cobbles and boulders, the collection of four wall and one base validation sample was considered to be adequate to. It is noted that no septic sampling density was proposed in the 13 May 2009 Scope of Works. Given the linear area of the soak pit scrape of approximately 29m, the collection of two validation samples was considered to be adequate to validate the area. Although not directly applicable, the sampling density is greater than the rate of 1 sample per 100m proposed for pipelines in the Scope of Works. The density is also considered to be sufficient given

the absence of any visual contamination, the fact that the soak pit consisted only of basalt gravel and cobbles. Given that the septic and soak pit consisted of the same material and was part of the same infrastructure, the seven validation samples should be considered in total when considering the adequacy of the validation sampling. The excavation/scrape area and sample locations are illustrated in Figure 6A.

The excavated material consisting of basalt gravel and cobbles was disposed of off-site. No waste tracking documentation is available. Previously approved imported material was used to backfill the excavation.

6.3.5.2 Concrete Slab

In July 2009, Enviropacific used an excavator to remove a concrete slab which underlay the former workshop. Two validation samples (4A/VS-3 and 4A/VS-4) were collected from natural soil directly beneath the concrete slab following its removal. The samples were collected using a decontaminated trowel. This number of sampling locations was considered to be sufficient to validate the concrete slab given the area of the excavation (6.6m^2).

The excavated material consisting of disturbed natural soil and concrete was disposed of off-site. No waste tracking documentation is available. Previously approved imported material was used to backfill the excavation.

It is noted that hydrocarbon analysis was not carried out on the samples collected. Hydrocarbon would typically be a COPC for a workshop and, as such, it is acknowledged that this was an oversight. However, additional work is not considered to be required based on the following multiple lines of evidence:

1. There were no visual or olfactory signs of hydrocarbon impacts to soil at the time of the slab removal. PID readings obtained during the soil sampling were 0.4 and 0.3ppm.
2. There was no evidence of staining on the concrete slab.
3. The concrete slab was in good condition with no obvious cracks.
4. There is no specific evidence of hydrocarbon storage/use in the workshop.
5. The workshop footprint was approximately 3X2m, meaning that, if there had been any hydrocarbon storage, it would have minimal such as drums or smaller tins.
6. The infrastructure was a portable workshop located within an area ostensibly used for Defence residential purposes by both officers and non-commissioned personnel. Accordingly it is unlikely that the workshop was used for heavy duty maintenance such as might have occurred in work areas near the hangars. It is more likely that it was a residential workshop with gardening equipment or the like. As such, if hydrocarbons were stored in the workshop it would likely have been in the form of heavier oils and similar that are not a significant risk.
7. The low permeability of the shallow lithology would retard migration of hydrocarbons should they have spilled. This has been confirmed with regard to groundwater.
8. Hydrocarbons degrade naturally overtime in the open environment. Given the age of any residual impact, due to the workshop/potential sources being removed circa 1950, theses impacts, if the ever existed, would have significantly attenuated to some degree.

Based on the above, it is concluded that there is essentially no potential for an unacceptable risk to either human-health or ecological receptors associated with the former slab and workshop and, as such, further sampling is not warranted.

6.3.5.3 Underground Asbestos Pipe

In October 2010, Enviropacific Services used an excavator to remove approximately 20m of underground asbestos pipe associated with a former watering system and a fire hydrant. The pipe was cut at the joins for easier handling, triple wrapped in heavy plastic, placed in a licenced bin and removed and disposed of off-site by Enviropacific. The soil around the pipe was natural and no excavation other than what was required to remove the pipe was conducted. The final excavation extended to approximately 0.7mBGS. The trench was backfilled with the soil removed from above the pipe so no soil was imported.

Two validation samples (4A/VS-6 and 4A/VS-7) were collected from below the asbestos pipe following its removal. The samples were collected from near the two ends of the trench, beneath what was judgementally considered to be the most damaged area of the pipe and therefore the most likely to cause impacts to the underlying soil. Soil beneath the pipe was also considered to be the most likely to be impacted with asbestos, and therefore the samples concentrated on the floor of the trench. Given that the pipe was 20m long, the sampling density was 1 per 10m. This is considered to be consistent with DOH 2009. There was no visual evidence of asbestos beneath or in the vicinity of the pipe. The pipe was observed to be in good condition, with no friable asbestos noted. For these reasons, it is not expected that there would be any asbestos contamination to soil. The collection of validation samples was completed to confirm this.

The overlying soil removed from above the pipe was used to backfill the trench created by the pipe removal. As there was no other infrastructure at this location, grid sampling had already been conducted at such a density to adequately assess the site, only natural and disturbed natural soil was encountered, there was no evidence of any impacts, and validation samples had been collected to test for the only identified COPC at the location, the reuse of the overlying soil was deemed appropriate such that the location does not require further assessment or remediation.

7 Groundwater Assessment

On 9 February 2009, groundwater monitoring well MW-7 was installed near the northeast boundary of Sub-Area 4A to assess potential groundwater hydrocarbon impacts in the vicinity of the suspected Area 5 UST. Further investigations failed to identify a UST in this area. This is discussed further in the Area 5 report. The UST is no longer considered likely to have been present. This is borne out by the lack of evidence of a UST turned up during test pitting and trenching works in Area 5 and due to the absence of hydrocarbon associated impacts in soil or groundwater at MW-7. Results are presented in section 9 and discussed in section 13.

On 26 October 2009, groundwater monitoring well MW-8 was installed in the southern part of Sub-Area 4A to assess potential groundwater hydrocarbon impacts in the vicinity of the former Area 1 UST.

7.1.1 Soil and Groundwater Conditions

The geology encountered in both wells consisted of silt and clay overlying Newer Volcanics basalt. Groundwater was encountered between approximately 10.5 and 13mBGS. The soil boring logs and well construction details are attached as Appendix G.

An assessment of groundwater gauging data from the November 2009 groundwater monitoring event (GME) indicates that groundwater flow at the site is most likely east toward to Werribee River, located approximately 650m from the site. A groundwater potentiometric surface map is included in Appendix G.

7.1.2 Monitoring Well Installation and Construction

Due to the geology of unconsolidated material overlying basalt, monitoring wells MW-7 and MW-8 were installed using a combination of hollow stem augers and hammer drilling. Completion depths, which were based on the stabilised groundwater level was 16mBGS for monitoring well MW-7 and 15mBGS for monitoring well MW-8. The well was constructed with 50 millimetre (mm) polyvinyl chloride (PVC) screen and blank riser. The annular space was backfilled with clean filtered sand to at least 1m above the screen, a minimum 1m thick bentonite seal above that and grout to the surface. Well details are summarised in Table G.

Table G: Monitoring Well Details Encountered During Drilling

Well	Total Depth (mBGS)	Groundwater Depth (mBGS)		Depth of Geologic Formation** Contact (mBGS)	Screen Interval (mBGS)	Targeted Aquifer
		Encountered	Stabilised*			
MW-7	16	13	10.5	9	9 to 16	Newer Volcanics
MW-8	15	10.5	9.5	8.5	9 to 15	Newer Volcanics

Notes:
*Stabilised depth as measured on day of well installation
** Depth of contact between Deutgam Silt and Newer Volcanics

7.1.3 Monitoring Well Development

Following installation, monitoring wells MW-7 and MW-8 were developed to remove any fines that had been smeared along the borehole during drilling. By removing these fines, the hydraulic communication between the well and the surrounding formation is improved. Development was performed by pulsing compressed air into the well to lift and drop the groundwater within the casing to cause a surging action on the screen which draws the fines into the well. The wells were then pumped to remove the fines. Development continued until the pumped water was clear, indicating the majority of fines had been removed. Purging details are not available for MW-7. Purging details for MW-8, including water quality parameter measurements, are attached as Appendix H. As similar methods were used for both development activities, as well as the consistent groundwater results across the site and the larger Riverwalk area, the missing data for MW-7 is not considered significant and does not impact the conclusions of the report.

7.1.4 Groundwater Sampling

Monitoring wells MW-7 and MW-8 were sampled on 25 and 26 November, 2009 and on 7 December 2011. During each sampling event the wells were purged and sampled using low-flow methodology in accordance with the Environmental Protection Authority of Victoria (EPAV) April 2000 Publication 699*: Groundwater Sampling Guidelines*. Prior to sampling, all wells were gauged with a water level sounder to measure depth to water.

During low-flow purging, groundwater drawdown was minimised to ensure that water was collected from the surrounding aquifer and not from within the well column. To ensure that representative groundwater from the aquifer was sampled, the groundwater quality parameters dissolved oxygen (DO), pH, electrical conductivity (EC), temperature and oxidation/reduction potential (ORP) were measured and, with purging continuing until these parameters stabilised. Once stabilisation was reached, samples were collected into laboratory provided bottles, placed on ice, and transported to the selected NATA certified laboratory, under chain-of-custody protocol, for chemical analysis. Samples that were to be analysed for dissolved metals were field filtered and preserved prior to bottling.

Purging and sampling details, including water quality parameter measurements, were recorded on sampling log sheets that are attached as Appendix H. Water quality meter calibration sheets are included in Appendix H.

8 Beneficial Uses and Assessment Criteria

Consideration for the appropriate site assessment criteria for the Riverwalk Area 4 investigations has been based on the following beneficial uses applicable to land and groundwater at the site given the proposed future use and existing groundwater quality.

8.1 Land

The 2002 State Environment Protection Policy - *Prevention and Management of Contaminated Land* (Land SEPP) provides a framework for identifying those beneficial uses which are protected under the existing and intended uses of the site. The proposed site development is classified as "Sensitive use - Other".

Table H summarises the beneficial uses applicable to each land use, and highlights the beneficial uses protected for 'Sensitive Use – Other'. Each beneficial use protected for the site is discussed in the following sections.

Table H: Protected Beneficial Uses of Land

Beneficial Use		Land Use						
		Parks & Reserves	Agriculture	Sensitive use		Recreation / Open space	Commercial	Industrial
				High Density	*Other*			
Maintenance of Ecosystems	*Natural Ecosystems*	Yes	No	No	No	No	No	No
	Modified Ecosystems	Yes	Yes	No	**Yes**	Yes	No	No
	Highly Modified Ecosystems	No	Yes	Yes	**Yes**	Yes	Yes	Yes
Human Health		Yes	Yes	Yes	**Yes**	Yes	Yes	Yes
Buildings & Structures		Yes	Yes	Yes	**Yes**	Yes	Yes	Yes
Aesthetics		Yes	No	Yes	**Yes**	Yes	Yes	No
Production of food flora and fibre		Yes	Yes	No	**Yes**	No	No	No

Source: 2002 State Environment Protection Policy - Prevention and Management of Contaminated Land
No = Beneficial use not applicable for the land use
Yes = Beneficial use applicable for the land use
Yes = Beneficial use applicable at the site

Given the proposed residential use of the site, the most relevant beneficial uses are Maintenance of Ecosystems (EIL) and Human Health (HIL-A). Table I summarises the Maintenance of Ecosystems and Human Health guidelines for the COPC. Because a composite sample is comprised of three primary

samples, the potential for an exceedance in one sample to be diluted by the other two must be accounted for. Hence the composite trigger value for each category is 1/3 of the individual number.

Table I: Maintenance of Ecosystems and Human Health Guidelines

Analyte		EIL (mg/kg)		HIL-A (mg/kg)	
		Individual	Composite[1]	Individual	Composite
Metals	Antimony (Sb)	NA	NA	NA	NA
	Arsenic (As)	20	6.66	100	33.33
	Barium (Ba)	300	100	NA	NA
	Beryllium (Be)	NA	NA	20	6.66
	Boron (B)	NA	NA	3000	1000
	Cadmium (Cd)	3	1	20	6.66
	Total Chromium (Cr)	1 (Cr^{6+}) & 400 (Cr^{3+})	0.33 (Cr^{6+}) & 133 (Cr^{3+})	100 (Cr^{6+}) & 12% (Cr^{3+}))	33(Cr^{6+}) & 4%(Cr^{3+})
	Cobalt (Co)	NA	NA	100	33.33
	Copper (Cu)	100	33.33	1000	333.33
	Lead (Pb)	600	200	300	100
	Manganese (Mn)	500	166.66	1500	500
	Molybdenum (Mo)	NA	NA	NA	NA
	Mercury (Hg)	1	0.33	15	5
	Nickel (Ni)	60	20	600	200
	Selenium (Se)	NA	NA	NA	NA
	Tin (Sn)	NA	NA	NA	NA
	Vanadium (V)	50	16.66	NA	NA
	Zinc (Zn)	200	66.66	7000	2333.33
Ammonia[2]		NA	NA	NA	NA
Asbestos		NA	NA	NA	NA
Cyanide (Total)		NA	NA	500 (complexed) 250 (free)	167 (complexed) 83 (free)
E. coli[3]		NA	NA	NA	NA
Fluoride		NA	NA	NA	NA
Nitrate		NA	NA	NA	NA
Nitrite		NA	NA	NA	NA
pH[4]		NA	NA	NA	NA
OCP/OPP		See[5]	NA	NA	NA
PAHs		NA	NA	20[6]	NA
TPH components		NA	NA	See[7]	NA

[1] As each composite sample is comprised of three primary samples, the appropriate trigger levels are found by dividing the EIL or HIL by three. Trigger value = *EIL/3 or HIL/*3.
[2] No criteria for nitrate, nitrite and ammonia were available for comparison at the time of reporting. These analytes are instead assessed against background concentrations in other sub-areas.
[3] The EPAV Publication 943 *Guidelines for Environmental Management of Biosolids Land Application* Grade criterion for *E.coli* is >100 most probably number per gram (MPN/g).
[4] ANZECC 1992 Background of 6 to 8 was used as a guide.
[5] NEPM EIL for aldrin and dieldrin = 10 mg/kg, fore chlordane = 50 mg/kg, for DDT + DDD + DDE = 200 mg/kg and for heptachlor = 10 mg/kg.
[6] NEPM HIL for benzo(a)pyrene = 1mg/kg.
[7] NSW EPA Criteria for C_6 – C_9 = 65 mg/kg and for C_{10} – C_{35} = 1,000 mg/kg.

Some analytes may be present naturally at concentrations above EIL and HIL-A guidelines within site soil.

8.1.1 Maintenance of Ecosystems

Objective

The Land SEPP states that for this protected beneficial use of land, the concentrations of contaminants must not be greater than:

- The investigation level specified in the National Environment Protection Measure (NEPM) (NEPC, 1999); or
- Levels derived using a risk assessment in accordance with the NEPM (NEPC, 1999); or
- Levels approved by the Authority.

Assessment Criteria

Based on the objectives of the Land SEPP, assessment criteria for the maintenance of modified and highly modified ecosystems were based upon NEPM Interim Urban Ecological Investigation Levels (EILs). In the instances where the selected criteria are not provided for the specific contaminant, reference has been made to the 'B' values in "Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites" (ANZECC, 1992), the NSW EPA Guidelines for Assessing Service Station Sites (1994), and EPAV Publication *943 Guidelines for Environmental Management of Biosolids Land Application.*

8.1.2 Human Health

Objective

The Land SEPP states that for this protected beneficial use of land, the concentrations of contaminants must not be greater than:

- The investigation level specified in the National Environment Protection Measure (NEPM) (NEPC, 1999); or
- Levels derived using a risk assessment in accordance with the NEPM (NEPC, 1999); or
- Levels approved by the Authority.

Assessment Criteria

Based on the objectives of the Land SEPP, assessment criteria for human health were based upon NEPM "A" Health Investigation Levels (HILs) for standard residential land use. In the instances where the selected criteria are not provided for the specific contaminant, reference has been made to the 'B' values in "Australian and New Zealand Guidelines for the Assessment and management of contaminated sites" (ANZECC, 1992), the NSW EPA Guidelines for Assessing Service Station Sites (1994), and EPAV Publication 943 *Guidelines for Environmental Management of Biosolids Land Application*.

8.1.3 Buildings and Structures

Objective

The Land SEPP states that "contamination must not cause the land to be corrosive or adversely affect the integrity of structures or building materials". The potential for corrosivity relates to the presence of acid sulphate soils.

Assessment Criteria

Based on the objectives of the Land SEPP, sulphate concentrations are to be compared to the NEPM EIL, which is considered to be protective of built structures. Sulphate and pH concentrations are also assessed with reference to the exposure classifications presented in Table 6.1 of Australian Standard AS2159-2009 Piling – Design and installation.

8.1.4 Aesthetics

Objective

The Land SEPP states that "contamination must not cause the land to be offensive to the senses of human beings".

Assessment Criteria

Based on the objectives of the Land SEPP, consideration was given to the olfactory and visual observations made during the field investigations. Areas of soil that were considered to be offensive to the senses were clearly identified for future remediation or management works.

8.1.5 Production of Food and Flora and Fibre

Objective

The Land SEPP states that "contamination of land must not:

- adversely affect produce quality or yield; or
- affect the level of any indicator in food, flora and fibre produced at the site (or that may be produced) such that the level of that indicator is greater than that specified by the Australia New Zealand Food Authority Food Standards Code".

Assessment Criteria

This beneficial use is consistent with the site's proposed residential use in the case of home grown produce. NEPM "A" HILs have been used as assessment criteria for this beneficial use. These HILs are based upon a standard residential setting where home grown produce contributes less than 10% of vegetable and fruit intake.

8.2 Groundwater

The 1997 SEPP Groundwaters of Victoria (Groundwater SEPP) defines the beneficial uses to be protected for a range of groundwater environments, as defined by their salinity measured as total dissolved solids (TDS). TDS in monitoring wells MW-7 and MW-8 has been measured between 4,660 and 7,100 milligrams per litre (mg/L). Therefore, groundwater at the site is classified as 'Segment C'.

Table J summarises the beneficial uses applicable to each Segment, and highlights the beneficial uses protected for 'Segment C'. Each beneficial use protected for the site is discussed in the following sections.

Table J: Protected Beneficial Uses of Groundwater

Beneficial Uses	Segments (mg/L TDS)				
	A1 (0 – 500)	A2 (501 – 1,000)	B (1,001 – 3,500)	C (3,501 – 13,000)	D (>13,000)
Maintenance of Ecosystems	Yes	Yes	Yes	**Yes**	Yes
Potable Water – Desirable	Yes	No	No	No	No
Potable Water – Acceptable	Yes	Yes	No	No	No
Potable Mineral Water	Yes	Yes	Yes	No	No
Agriculture, Parks and Gardens	Yes	Yes	Yes	No	No
Stock Watering	Yes	Yes	Yes	**Yes**	No
Industrial Water Use	Yes	Yes	Yes	**Yes**	Yes
Primary Contact Recreation (e.g. Bathing, Swimming)	Yes	Yes	Yes	**Yes**	No
Building and Structures	Yes	Yes	Yes	**Yes**	Yes

Source: 1997 State Environment Protection Policy - Groundwaters of Victoria
No = Beneficial use not applicable for the land use
Yes = Beneficial use applicable for the land use
Yes = Beneficial use applicable at the site

Given the proposed residential use of the site, the most relevant beneficial uses are Maintenance of Ecosystems and Primary Contact Recreation.

8.2.1 Maintenance of Aquatic Ecosystems

This use applies at the point of groundwater discharge to a receiving surface water body. The Groundwater SEPP refers to the SEPP for surface waters for indicators and objectives for this protected beneficial use. The nearest discharge point is the Werribee River, located approximately 0.6km to the east. Werribee River is contained within the "Cleared Hills & Coastal Plains" segment in the Surface Water SEPP, for which aquatic ecosystems are considered to be slightly to moderately modified. The environmental quality indicators are those specified in the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC 2000). The level of ecosystem protection in the Guidelines that needs to be used to determine the objective is 95% for slightly to moderately modified aquatic freshwater ecosystems.

8.2.2 Stock Watering

The use of groundwater for stock watering is considered unlikely due to the future use of the site and presence of mains water at the site. The Groundwater SEPP refers to the *Australian Water Quality Guidelines for Fresh and Marine Waters* (ANZECC 1992) Table 5.10 for criteria for this beneficial use.

8.2.3 Industrial Water Use

The use of groundwater for industrial purposes is considered to be unlikely given the proposed residential development. Furthermore, the relatively high TDS concentrations would render the groundwater unsuitable for most industrial uses, except possibly for single-pass cooling, without pre-treatment.

8.2.4 Primary Contact Recreation

This use is considered possible given the proposed residential development at the site and the potential for groundwater to be extracted for use in a swimming pool or similar. The ANZECC 1992 guidelines default to the criteria for 'Raw Drinking Water' for the beneficial use 'Recreational Water'. According to the guidelines, higher concentrations (20 times) may be tolerated occasionally if it is assumed that a person will ingest a maximum of 100 mL water during a normal swimming session compared with 2 Litres/day for potable water.

8.2.5 Buildings and Structures

This use is associated with the likelihood of pilings coming into contact with groundwater with a low pH or high sulphate content. Based on the depth to groundwater and the current and proposed use of the site, this is considered unlikely. pH concentrations have been compared to the Australian Standard AS2159-2009 Piling – Design and installation in the unlikely event that a building or structure may come into contact with groundwater.

9 Soil Results

Soil analytical and field screening results are presented below. Complete copies of the NATA endorsed analytical reports, with analytical methods and analytical results, laboratory QC data, and accompanying chain-of-custody documentation, are attached as Appendix I.

9.1 Soil Analytical Results

Twenty-six target soil samples, 188 grid pattern soil samples, 11 validation soil samples and 26 monitoring well installation soil samples were collected from the site. Of these samples, the following were analysed by the laboratory:

- 22 soil samples from seven test pits targeting the former latrine, ablutions and workshop and existing septic and soak pit and concrete slab were analysed as individual samples. These samples are summarised in Table 11 and the analytical results are presented in Tables 12 to 23;
- 62 soil samples from 34 grid pattern test pits were analysed as individual samples. These samples are summarised in Table 5 and the analytical results are presented in Tables 6 to 10;
- 11 soil samples from 11 validation locations were analysed. These samples are summarised in Table 24 and the analytical results are presented in Tables 25 to 32; and
- 17 soil samples collected from the two soil borings that were completed as monitoring wells MW-7 and MW-8 were analysed. These samples are summarised in Table 33 and the analytical results are presented in Tables 34 to 41.

In addition, 144 of the individual grid samples were combined into 48 three-point composite grid samples. Of these samples, the following were analysed by the laboratory:

- 43 three-point composite grid samples made from 129 individual grid samples were analysed. Composite grid samples are summarised in Table 1 and composite sample analytical results are summarised in Tables 2 to 4.

All other collected soil samples were submitted to the laboratory to be held for future analysis if required. No additional analysis was carried out.

Results for samples analysed for an ‘EPA Screen’ suite of analytes have been reported separately in Tables 10, 23 and 41.

In addition to the above primary samples, the following QA/QC samples were collected and submitted for analytical testing:

- 8 blind duplicate and 5 split duplicate samples. These samples are summarised in Table 53 and the analytical results are presented in Tables 54 to 57; and
- 9 trip and 11 rinsate blank samples. These samples are summarised in Table 58 and the analytical results are presented in Tables 59 and 60.

Analytical results are presented below.

9.1.1 Acidity/Alkalinity

Acidity/alkalinity (pH) analysis was conducted on 29 grid, 20 target and four validation samples. Twenty-five (47%) had slightly acidic or alkaline pH values outside the ANZECC 1992 Background Range. Analytical results are summarised in Tables 6, 18 and 29.

Twelve composite samples comprised of 36 individual grid samples were also analysed for pH. Six (50%) were alkaline, with pH values outside the ANZECC 1992 Background Range. Analytical results are summarised in Table 2.

9.1.2 Ammonia, Nitrate and Nitrite

Ammonia, nitrate and nitrite results are discussed below:

- Ammonia was not detected at or above the laboratory reporting limit in any of 18 samples analysed;
- Nitrate was reported in seven of 20 samples analysed, with concentrations ranging from non-detect in 13 samples to a maximum concentration of 2.7mg/kg in target sample 4A/T1A/0.25; and
- Nitrite was reported in six of eight samples analysed, with concentrations ranging from non-detect in two samples to a maximum of 0.66mg/kg in validation sample 4A/VS-4.

Ammonia, nitrate and nitrite results are summarised in Tables 19 and 31.

Nitrate and nitrite concentrations in Sub-Area 4A are consistent with those from other sub-areas and though there is no criterion available to compare to, the low levels reported are considered likely to represent Area 4 background levels. Refer to Table K for a comparison of the Sub-Area 4A results to those from nearby sub areas. All samples were collected from natural soil. Furthermore, the levels are considered to be low and to not be a concern.

Table K: Nitrite and Nitrate Concentrations in Surrounding Sub-Areas

Sub-Area	Sample Name	Sample Date	Nitrate as (N) (mg/kg)	Nitrite as (N) (mg/kg)
4B	4B/T23/0.5	16-May-06	16.0	<1.0
	4B/T23/2.0	16-May-06	14.2	<1.0
4C	4C/T5/1.0	10-Apr-06	0.1	<0.1
	4C/T6/0.25	10-Apr-06	0.7	<0.1
	4C/T6/1.0	10-Apr-06	0.1	<0.1
	4C/T7/0.25	10-Apr-06	1.0	<0.1
	4C/T7/1.0	10-Apr-06	13.8	0.2
4F	4F/T6/0.25	20-Jul-06	7.2	1.0
	4F/T6/1.0	20-Jul-06	0.4	<0.1
4G	4G/T3/0.25	20-Jul-06	5.0	0.6
	4G/T3/1.0	20-Jul-06	0.6	0.4

9.1.3 Asbestos

Asbestos analysis was conducted on 30 grid, seven target and four validation samples. Approximately 50% of the Sub-Area 4A samples analysed were analysed for asbestos, which is consistent with the Auditor requested analytical suite outlined in section 6.2.3. Although the sampling was completed prior to its release, it is noted that the sampling density exceeds minimum sampling density requirements specified by the *Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia* (DOH, 2009).

In general, near surface sampling (0.25mBGS) was undertaken for asbestos analysis. Due to human error, asbestos analysis was also requested for the 0.5 and 1.0mBGS natural soil samples from test pit 4A/G40. There was no evidence of asbestos at any depth of the 4A/G40 profile.

Asbestos was not detected in any of the samples analysed. Asbestos analytical results are presented in Tables 9, 20 and 30.

9.1.4 Benzene, Toluene, Ethylbenzene and Xylene

BTEX analysis was conducted on two grid, two target and five soil boring samples. Five of these were samples analysed for an EPA screen, which includes BTEX. None of the samples analysed had BTEX concentrations at or above laboratory reporting limits or the adopted NEPM EIL and HIL 'A' criteria.

9.1.5 Cyanide

Cyanide analysis was conducted on two grid, four target and seven soil boring samples. Five of these were samples analysed for an EPA screen, which includes cyanide. Cyanide was reported in five of the seven samples, with a maximum concentration of 140mg/kg in sample 4A/B-8/0.25. All results were below the HIL 'A' adopted criteria. Analytical results are summarised in Tables 10, 21, 23 and 41.

9.1.6 E. Coli and Coliforms

E.coli analysis was conducted on six validation and 16 target samples to assess potential impacts associated with the septic and soak pit, latrine and ablutions. Two of the validation samples targeting the septic and soak pit, and two targeting the workshop concrete slab, were also analysed for a broader suite of faecal coliform bacteria.

E. coli was not detected at or above the laboratory reporting limit in any sample. Analytical results are summarised in Tables 22 and 32.

Faecal coliforms were not detected at or above the laboratory reporting limit in any sample. Analytical results are summarised in Table 32.

9.1.7 Fluoride

Fluoride analysis was conducted on two grid, eight target and one soil boring sample. Five of these were samples analysed for an EPA screen, which includes fluoride. There are no applicable guidelines to compare too. However, fluoride is not considered to be highly toxic and the concentrations reported are not considered to present and unacceptable ecological or human health risk.

Analytical results are summarised in Tables 10, 21, 23 and 41.

9.1.8 Metals

Eleven target samples, 37 individual grid samples, nine validation samples and 17 soil boring samples were analysed for metals. In addition, 123 individual grid samples were made into 41 three-point composite grid samples and analysed for metals. Five samples were analysed for the EPA analyte screen metals suite . Five of the soil boring samples were analysed for lead only.

None of the following metals were identified in any of the samples at concentrations at or above the NEPM EIL, HIL A or adjusted NEPM EIL guidelines:

- Antimony (Sb);
- Beryllium (Be);
- Boron (B);
- Cadmium (Cd);
- Cobalt (Co);
- Copper (Cu);
- Chromium (Cr);
- Lead (Pb);
- Mercury (Hg);
- Molybdenum (Mo);
- Selenium (Se);
- Tin (Sn); and
- Zinc (Zn).

Remaining metals results for the various sample types are presented below.

9.1.8.1 Summary of individual grid samples

- The barium concentrations of 310mg/kg reported in sample 4A/G9/0.25 and of 540mg/kg reported in sample 4A/G59/0.5 exceeded the applicable NEPM EIL criterion of 300mg/kg. No other metals for this sample exceeded NEPM EIL or NEPM HIL A site assessment criteria.
- No metals in the remaining individual grid samples exceeded the NEPM EIL or HIL A site assessment criteria.

9.1.8.2 Summary of composite samples

- Arsenic concentrations in 6 of 41 composite samples (15%) were above the adjusted NEPM EIL criterion of 6.66mg/kg. The maximum concentration of 14mg/kg was reported in sample 4A/C26 (composite of the 0.5mBGS samples from test pits 4A/G32, 4A/G36 and 4A/G37).
- Barium concentrations in 16 of the 41 composite samples (39%) were above the adjusted NEPM EIL criteria of 100mg/kg. The maximum concentration of 330mg/kg was reported in sample 4A/C10 (composite of the 0.25mBGS samples from test pits 4A/G14, 4A/G15 and 4A/G18).
- Manganese concentrations in all 41 composite samples were above the adjusted NEPM EIL criteria of 167mg/kg. The maximum concentration of 464mg/kg was reported in sample 4A/C4 (composite of the 0.25mBGS samples from test pits 4A/G2, 4A/G7 and 4A/G10).
- Nickel concentrations in 38 of the 41 composite samples (93%) were above the adjusted NEPM EIL criteria of 20mg/kg. The maximum concentration of 55mg/kg was recorded in sample 4A/C38 (composite of the 0.5mBGS samples from test pits 4A/G45, 4A/G50 and 4A/G52).

- Vanadium concentrations in all 41 composite samples were above the adjusted NEPM EIL criteria of 16.6mg/kg. Three of these also exceeded that standard EIL of 50mg/kg. The maximum concentration of 60mg/kg was reported in sample 4A/C10 (composite of the 0.25mBGS samples from test pits 4A/G14, 4A/G15 and 4A/G18).

9.1.8.3 Summary of target samples

- The barium concentration of 430mg/kg reported for sample 4A/T3B/1.0 exceeded the applicable NEPM EIL criterion of 300mg/kg. No other metals for this sample exceeded NEPM EIL or NEPM HIL A site assessment criteria.
- No metals in the remaining target samples exceeded the NEPM EIL or NEPM HIL A site assessment criteria.

9.1.8.4 Summary of validation samples

- A barium concentration of 1,530 mg/kg was detected in validation sample 4A/VS-2. This is above the adopted NEPM EIL criterion of 300mg/kg.
- No other target samples exceeded the NEPM EIL or NEPM HIL A site assessment criteria.

9.1.8.5 Summary of soil boring samples

- Manganese concentrations in 7 of the 12 samples (58%) were above the adopted NEPM EIL criterion of 500mg/kg. The maximum concentration of 900mg/kg was reported in sample 4A/B 8/10.
- Nickel concentrations of 150mg/kg and 130mg/kg were reported in soil boring samples 4A/B 8/10.0 and 4A/B-8/12, respectively. These are above the adopted NEPM EIL criterion of 60mg/kg.
- Vanadium concentration of 51mg/kg was reported in sample 4A/B-8/9.0. This is above the adopted NEPM EIL criterion of 50mg/kg.
- No other individual soil boring sample concentrations for the metals analysed exceeded the NEPM EIL or HIL A criteria.

9.1.8.6 Metals Results Statistical Analysis

The only metal with concentrations above the adopted site criteria was barium. To characterise barium results, the 95% UCL of the arithmetic mean was calculated for grid and target sample barium concentrations that exceeded the NEPM EILs. Because the samples labelled target samples were located in the wrong place and therefore did not target any infrastructure, and as such would not be associated with any known or potential anthropogenic source,f it is considered appropriate to include them in the calculation. The results are presented in Table L.

Table L: Metals 95% UCL Statistical Analysis

Sample Type	Analyte	Depth mBGS	Concentration (mg/kg)				Number of Samples	Standard Deviation	95% UCL (mg/kg)	NEPM EIL (mg/kg)	NEPM Background ranges (mg/kg)
			Max	Min	Median	Mean					
Grid	Barium	0.25	310	20	70	81.68	19	64.83	107.47	300	100-3000
		0.50	540	40	70	120.20	15	125.69	177.35		
		1.00	430	57	80	117.54	13	100.79	167.36		

Notes: Grey shading indicates concentrations above NEPM EIL criteria.

The results of the statistical analysis indicate that the 95% UCL of the arithmetic mean of individual samples for barium from 0.25 and 0.5mBGS are below the site adopted criteria.

9.1.9 Organochlorine Pesticides

OCP analysis was conducted on 42 grid, six target, four validation and 11 soil boring samples. Five of these were samples analysed for an EPA screen, which includes OCPs. Twelve composite samples comprised of 36 individual grid samples were also analysed for OCPs.

None of the samples analysed had OCP concentrations at or above laboratory reporting limits or the adopted NEPM EIL and HIL 'A' criteria. Analytical results are summarised in Tables 4, 8, 16, 28 and 38.

9.1.10 Organophosphate Pesticides

OPP analysis was conducted on 31 grid, four target and 10 soil boring samples. Twelve composite samples comprised of 36 individual grid samples were also analysed for OPPs.

None of the samples analysed had OPP concentrations at or above laboratory reporting limits or the adopted NEPM EIL and HIL 'A' criteria. Analytical results are summarised in Tables 4, 8 and 39.

9.1.11 Phenoxy Herbicides

Phenoxy herbicide analysis was conducted, as part of the standard SVOC suite, on two target and 10 soil boring samples. None of the samples analysed had phenoxy herbicide concentrations at or above the laboratory reporting limit or the adopted NEPM EIL and HIL 'A' criteria. Analytical results are summarised in Tables 17 and 40.

9.1.12 Phthalates

Phthalate analysis was conducted, as part of the standard SVOC suite, on four target and 10 soil boring samples. None of the samples analysed had phthalate concentrations at or above the laboratory reporting limit or the adopted NEPM EIL and HIL 'A' criteria. Analytical results are summarised in Tables 17 and 40.

9.1.13 Phenols

Phenols analysis was conducted on two grid, six target and 11 soil boring samples. Five of these were samples analysed for an EPA screen, which includes phenols. None of the samples analysed had PAH concentrations at or above laboratory reporting limits. Analytical results are summarised in Tables 10, 15, 23, 37 and 41.

9.1.14 Polycyclic Aromatic Hydrocarbons

PAH analysis was conducted on 45 grid, six target, two validation and 15 soil boring samples. Five of these were samples analysed for an EPA screen, which includes PAHs. Twenty-four composite samples comprised of 72 individual grid samples were also analysed for PAHs. None of the samples analysed had PAH concentrations at or above laboratory reporting limits or the adopted NEPM EIL and HIL 'A' criteria. Analytical results are summarised in Tables 3, 7, 14, 27 and 36.

9.1.15 Polychlorinated Biphenyls

PCB analysis was conducted on two grid, four target and 11 soil boring samples. Five of these were samples analysed for an EPA screen, which includes PCBs. None of the samples analysed had PCB concentrations at or above laboratory reporting limits. Analytical results are summarised in Tables 10, 17, 23, and 41.

9.1.16 Sulphate

Sulphate analysis was conducted on two validation samples to assess potential impacts associated with the workshop concrete slab. The reported concentrations were 50 and 100mg/kg, which are below the NEPM EIL criterion of 2000 mg/kg. Analytical results are summarised in Table 32.

9.1.17 Total Petroleum Hydrocarbons C_6 – C_9

TPH C_6-C_9 analysis was conducted on 44 grid, two target, four validation and 15 soil boring samples. Five of these were samples analysed for an EPA screen, which includes TPH C_6-C_9. None of the samples had reported concentrations at or above the laboratory reporting limit. Analytical results are summarised in Tables 7, 10, 23, 26 and 41.

9.1.18 Total Petroleum Hydrocarbons C_{10} – C_{36}

TPH C_{10}-C_{36} analysis was conducted on 44 grid, four target, four validation and 15 soil boring samples. Five of these were samples analysed for an EPA screen, which includes TPH C_{10}-C_{36}. Samples 4A/T3A/0.25 and 4A/T3B/0.25 had TPH C_{15}-C_{36} concentrations that were slightly higher than the laboratory reporting limit. The concentrations likely result from biological activity and therefore do not suggest anthropogenic impacts. The levels are such that there is no likely human health or ecological risk. None of the other samples analysed had concentrations at or above the laboratory reporting limit. Analytical results are summarised in Tables 7, 10, 23, 26, 35 and 41.

9.2 Soil Field Screening Results

In addition to laboratory analysis, field screening was conducted during field works to identify contamination.

9.2.1 Field Screening for VOCs

Soil samples were field screened for VOCs using a PID. PID VOC readings were generally zero and did not exceed 1.8ppm. Readings in this low range do not indicate a health risk or environmental impacts requiring further attention. Visual and olfactory observations made during field screening also did not detect VOCs, supporting the conclusion that there were no VOC impacts.

The PID was calibrated by OTEK personnel at the beginning of each sampling day. The PID calibration records are attached as Appendix F. PID readings recorded during the assessment works are noted within the test pit logs and soil boring logs attached as Appendices C and G.

9.2.2 Field Screening for Asbestos

During assessment works, ground surface in the vicinity of each Sub-Area 4A sampling location was visually inspected for the presence of asbestos containing material (ACM). No visual ACM was identified during Sub-Area 4A assessment work

10 Groundwater Results

Groundwater analytical results are presented below. Analytical results are summarised on attached Analytical Tables 42 to 46. Complete copies of the NATA endorsed analytical reports, with analytical methods and analytical results, laboratory QC data, and accompanying chain-of-custody documentation, are attached as Appendix I.

10.1 Groundwater Analytical Results

Groundwater samples were collected from the site from both wells in 2009 and 2011. Samples collected in 2009 were analysed for BTEX, TPHs, metals, PAHs, phenols, VOCs and the hydrochemistry parameters of acidity/alkalinity, TDS, nitrate and sulphate. Samples collected in 2011 were analysed for BTEX, TPHs, metals and the hydrochemistry parameters of acidity/alkalinity, TDS, nitrate, nitrite and sulphate. Analytical results are presented below.

It is noted that, due to human error, the MW-8 sample from the 2009 sampling event was labelled A1/MW-8 instead of A4/MW-8 on the chain-of-custody and in the analytical laboratory report. The analytical tables identify the sample as MW-8 only.

10.1.1 Benzene, Toluene, Ethylbenzene and Xylenes

Neither of the samples analysed in sampling events in 2009 and 2011 had BTEX concentrations at or above laboratory reporting limits or relevant criteria. Analytical results are summarised in Table 43.

10.1.2 Hydrochemistry

Hydrochemistry properties were analysed to better understand the aquifer. Analytical results are summarised in Table 46. Pertinent results are also discussed below.

10.1.2.1 Acidity/Alkalinity

Alkalinity as bicarbonate was 358 and 438mg/L in MW-7 and 320 and 360mg/L in MW-8. The pH was 7.17 and 7.43 in MW-7 and 7.44 and 7.27 in MW-8.

Based on the Australian Standard AS2159 – 2009, the pH range is identified as presenting ‘non aggressive or mild exposure conditions for buildings and structures’.

10.1.2.2 Chloride

Chloride was identified at concentrations of 2,980 and 3,770mg/L in MW-7 and 2,100 and 3,110mg/L in MW-8. This exceeds the Recreational Water guideline of 400mg/L. The concentration is below the criterion when a factor of 20 is applied to account for the limited ingestion associated with recreational water versus drinking water.

10.1.2.3 Nitrate as N

Nitrate as N was identified in MW-7 at concentrations of 2.69 and 2.32µg/L and in MW-8 at concentrations of 1.31 and 4.21µg/L. This exceeds the Maintenance of Ecosystems guideline of 0.7mg/L.

10.1.2.4 Sodium

Sodium was identified in MW-7 at concentrations of 1,210 and 1,260mg/L and in MW-8 at concentrations of 1,010 and 1,450mg/L. This exceeds the Recreational Water guideline of 300mg/L. The concentration is below the criterion when a factor of 20 is applied to account for the limited ingestion associated with recreational water versus drinking water.

10.1.2.5 Sulphate

Sulphate was identified in MW-7 at a concentration of 458mg/L. This exceeds the Recreational Water guideline of 400mg/L. The concentration is below the criterion when a factor of 20 is applied to account for the limited ingestion associated with recreational water versus drinking water.

Based on the Australian Standard AS2159 – 2009, the sulphate concentrations are identified as presenting 'non aggressive or mild exposure conditions for buildings and structures'.

10.1.3 Metals

Groundwater samples were analysed for dissolved metals. The following metals were not identified in groundwater at concentrations at or above laboratory reporting limits:

- Antimony (Sb);
- Arsenic (As);
- Barium (Ba);
- Beryllium (Be);
- Cadmium (Cd);
- Chromium (Cr);
- Cobalt (Co);
- Lead (Pb);
- Mercury (Hg);
- Molybdenum (Mo);
- Selenium;
- Tin (Sn); and
- Vanadium (V).

The remaining metals are discussed below. Analytical results are summarised in Table 42.

10.1.3.1 Boron

Boron was identified in MW-8 at a concentration of 430 and 450µg/L. This exceeds the Maintenance of Ecosystems guideline of 370µg/L.

10.1.3.2 Copper

Copper was identified in MW-7 at concentrations of 3 and 4µg/L and in MW-8 at concentrations of 4 and 5µg/L. This exceeds the Maintenance of Ecosystems guideline of 1.4µg/L.

10.1.3.3 Manganese

Manganese was identified in MW-8 at a concentration of 743µg/L. This exceeds the Recreational Water guideline of 100µg/L. The concentration is below the criterion when a factor of 20 is applied to account for the limited ingestion associated with recreational water versus drinking water.

10.1.3.4 Nickel

Nickel was identified in MW-7 at concentrations of 31 and 12µg/L and in MW-8 (2011) at 27µg/L. This exceeds the Maintenance of Ecosystems guideline of 11µg/L.

10.1.3.5 Selenium

Selenium was identified in MW-7 and MW-8 (2011) at a concentration of 10µg/L. This is equal to the Recreational Water guideline. The concentration is below the criterion when a factor of 20 is applied to account for the limited ingestion associated with recreational water versus drinking water.

10.1.3.6 Zinc

Zinc was identified in MW-7 at concentrations of 18 and 20µg/L and in MW-8 at 9 and 19µg/L. This exceeds the Maintenance of Ecosystems guideline of 8µg/L.

10.1.4 Polycyclic Aromatic Hydrocarbons

Neither of the samples analysed in 2009 had PAH concentrations at or above laboratory reporting limits or relevant criteria. Analytical results are summarised in Table 44.

10.1.5 Phenols

Neither of the samples analysed 20094 had phenol concentrations at or above laboratory reporting limits or relevant criteria. Analytical results are summarised in Table 44.

10.1.6 Total Petroleum Hydrocarbons

TPH carbon fraction C_{15} to C_{28} was identified in MW-8 (2009) at a concentration of 300µg/L. There is no applicable criterion for this analyte. All other TPH concentrations were below laboratory reporting limits and relevant criteria. Analytical results are summarised in Table 43.

10.1.7 Volatile Organic Compounds

Neither of the samples analysed had VOC concentrations at or above laboratory reporting limits or relevant criteria. Analytical results are summarised in Table 45

11 Quality Assurance / Quality Control Procedures

Sampling activities were undertaken in accordance with the revised SAP, and conformed to the following guidelines and standards:

- *Australian Standard AS 4482.1 (2005) Guidelines to the sampling and investigation of potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds;*
- *Australian Standard AS 4482.2 (1999) Guidelines to the sampling and investigation of potentially contaminated soil – Part 2: Volatile substances; and*
- *The National Environment Protection (Assessment of Site Contamination) Measure (NEPM), National Environment Protection Council, December 1999.*

11.1 QA/QC Documentation

11.1.1 Daily Field Reports

- Field activities were recorded throughout the project on daily field logs. The following information was recorded:
- Date;
- Project name;
- Project number;
- Site address;
- Personnel and contractors on-site;
- Summary of tasks undertaken at the site;
- Time tasks are undertaken; and
- Summary of equipment used.

11.1.2 Test Pit Logs

The properties of each test pit were recorded on field test pit logs. The following information was recorded:

- Date;
- Project name;
- Project number;
- Name of OTEK personnel logging the soil and collecting samples;
- Test pit identification;
- Location of test pit;
- Surface conditions;
- Subsurface soil conditions – including USCS classification and olfactory rankings in accordance with AS4482.1 and AS4482.2;
- Depth of samples collected;
- Sampling identification; and
- PID readings.

Soil sample locations were identified using GPS for future reference. Test pit logs are included as Appendix C.

11.1.3 Chain-of-Custody Documentation

Chain-of-custody documentation accompanied each sampling batch to the selected laboratory to allow the movement, custody and location of each sample to be tracked. This helps ensure analysis of samples within appropriate holding times and provides a means for recording preservation techniques and communicating analysis required for each sample. Chain-of-custody forms were filled out at the time of sampling or at the end of each day. Chain-of-custody documentation included the following information:

- Date;
- Project name;
- Project number;
- Name and contact details of client;
- Name of personnel collecting, relinquishing and receiving the samples;
- Departure time from site;
- Date of sample received by laboratory;
- Sample identification;
- Sample matrix;
- Laboratory analysis requested;
- Sample preservation method; and
- Instructions such as special handling procedures or safety precautions.

Chain-of-custody documentation was signed and dated by the laboratories to confirm that samples were received in good condition and within acceptable time limits.

11.1.4 Data Validation Reports

OTEK has developed a data validation report (DVR) to check the internal quality control system of both the primary and secondary laboratory for each certificate of analysis produced. The DVR reports assess the accuracy, precision and representativeness of the data collected and presented in this report. Data quality checks undertaken within the DVR process confirm:

- The appropriate ratio of primary to quality samples;
- The appropriate analysis method has been used;
- An extraction preparation summary has been produced; and
- Appropriate laboratory internal duplicates, method blanks and spike recoveries.

Laboratory reports and associated DVRs are included in Appendix I.

11.2 QA/QC Field Procedures

11.2.1 Field Personnel

Field work was conducted by qualified personnel. Where ever possible, field personnel were held constant throughout the project to help ensure consistency in sample collection.

11.2.2 Decontamination of Sampling Equipment

Sampling equipment used at the site was decontaminated prior to the commencement of field work, between each sampling event, between sampling locations, and at the completion of field work. This is done to

minimise the potential for cross contamination of samples and the transport of contamination off-site. The following procedure was used to decontaminate equipment:

- Scrubbing with a brush using Decon 90® and potable water;
- Rinsing of equipment with potable water; and
- Rinsing of equipment with deionised water.

11.2.3 Sample Containers

Primary and quality soil samples were placed in appropriate laboratory provided glass sample jars with Teflon® lined screw-on caps. Water samples were decanted into appropriate laboratory glass or plastic jars with Teflon® lined screw-on caps. Samples were immediately stored in ice-chilled containers for transport under chain-of-custody documentation to the NATA accredited laboratory.

11.2.4 Sample Submission to Analytical Laboratories

Primary, blind duplicate and blank samples were submitted to NATA approve laboratory Australian Laboratory Services Pty Ltd (ALS) or to Labmark Pty Ltd (Labmark), formerly Amdel Pty Ltd. Split duplicate samples were submitted to Labmark or Groundswell Laboratories. The laboratories were required to adhere to NATA endorsed testing methodologies and to conduct regular quality control checks on their analyses. OTEK requires these laboratories to regularly provide results of reagent blanks, control standards, repeat duplicates and recoveries to enable an assessment of the accuracy and precision of results. To enable a quantitative assessment of the results, the laboratory reporting limits were required to be less than the applicable criteria.

All laboratory certificates display the NATA accreditation stamp and sample receipt advice to confirm the condition of samples upon receipt by the selected laboratories.

11.2.5 Holding Times

All primary and quality soil and water samples were submitted to the selected NATA accredited laboratories within recommended holding times to ensure appropriate laboratory procedures were adhered to and to ensure analytical results reported by the laboratories were representative of site conditions.

11.3 QA/QC Samples - Soil

11.3.1 Blind Duplicate Samples

Blind duplicate samples were submitted to the primary laboratory to assess the accuracy of laboratory results. These blind duplicates were obtained at a frequency of approximately 1 per 20 primary samples collected. Wherever possible, duplicates were collected from locations where contamination was more likely to be found such that a quantitative assessment of calculated relative percent differences (RPDs) could be made.

11.3.2 Split Duplicate Samples

Split duplicate samples were submitted to a secondary laboratory as a check against the procedures, methodologies and accuracy of the primary laboratory. Split duplicate samples were obtained at a frequency of approximately 1 per 20 samples collected. Wherever possible, split duplicate samples were collected from

locations where contamination was more likely to be found such that a quantitative assessment of calculated RPD could be made.

11.3.3 Rinsate Blank Samples

Eleven rinsate/equipment blank samples are used to assess decontamination procedures in the field to ensure cross contamination between sampling locations was not occurring. This ratio represents one blank sample per day per sampling matrix per piece of sampling equipment. The exceptions were the following dates:

- 9 February 2009 during soil boring/monitoring well installation; and
- 27 July 2009 during infrastructure validation sampling.

On which days, due to human error, rinsate blanks were not collected. Given the absence of COPC exceedances, it is unlikely that cross contamination would have occurred. This omission is not considered to impact the conclusions of this report.

11.3.4 Trip Blank Samples

Nine trip blank samples were prepared in the field by OTEK personnel to accompany the sample batches during the day and during transportation to the laboratory to identify any potential for cross contamination. Due to human error, trip blanks were not collected on:

- 11, 14 or 15 April 2008 during grid pattern sampling; or
- 17 April 2008 during target sampling.

Given the absence of COPC exceedances, it is unlikely that cross contamination would have occurred. This omission is not considered to impact the conclusions of this report.

11.4 QA/QC Samples – Groundwater

In addition to the primary samples, the following quality samples were collected during the groundwater sampling events for MW-7 and MW-8 in November 2009 and December 2011:

- Two Blind duplicate samples were submitted to the primary laboratory to assess the accuracy of laboratory results. Two split duplicate samples were submitted to a secondary laboratory as a check against the procedures, methodologies and accuracy of the primary laboratory.
- Rinsate/equipment blank samples were collected to assess decontamination procedures in the field to ensure cross contamination between sampling locations is not occurring. Two rinsate blanks were collected.
- Three trip blank samples were prepared in the field by OTEK personnel to accompany the sample batches during transportation to the laboratory to assess the potential for cross contamination.

12 Quality Assurance / Quality Control Analytical Results

Quality sample analytical results are summarised in Tables 53 to 60. A table identifying the sample registry for the primary, blind replicate and split duplicate samples for all Sub-Area 4A sampling is included in Appendix I.

12.1 Relative Percent Difference

The duplicate and split sample are analysed as a check against the results reported for the primary sample. The quality results are compared to the parent sample result through the use of relative percent difference (RPD) calculations. An RPD equal to or less than 50% is interpreted as indicating good agreement between the parent and quality sample. Instances where RPDs are greater than 50% require further analysis.

The ensure consistency, the following methodology was followed whenever one or both of the parent/duplicate or parent/split pairs had results below or at the laboratory reporting limit:

- Where the analytical concentration for one of the duplicate pair was greater than the laboratory reporting limit and one was less than the laboratory reporting limit, the RPD was calculated by assuming the lower value was equal to the reporting limit.
- Where both samples in the duplicate pair had analyte concentrations below the laboratory reporting limit, no RPD calculation was attempted as the results were considered acceptable for the purpose of the investigation.

12.2 Soil Duplicate and Blank Samples

12.2.1 Sampling Program

The following blind and split duplicate soil samples were collected for analysis:

- Grid sampling – three blind duplicate and three split duplicate samples;
- Target sampling – two blind and one split duplicate sample;
- Validation sampling – one blind sample; and
- Soil boring sampling – two blind and one split duplicate sample.

The following rinsate and trip blank samples were collected for analysis during soil sampling:

- Grid sampling – seven rinsate blanks and four trip blanks;
- Targeted sampling – one rinsate blank;
- Validation sampling – one rinsate and two trip blanks; and
- Soil boring sampling – two rinsate blanks and two trip blanks.

12.2.2 Sampling Frequency

For several analytes across the various sampling events, an insufficient number of duplicate samples were analysed to meet the recommended 1 to 20 ratio. However, the following should be noted when considering this:

- Due to the low frequency of primary samples collected and analysed for these COPCs, as per the revised SAP, a one in 20 sampling frequency was not achieved for both blind and split duplicates for asbestos, ammonia, cyanide, fluoride, E. coli, nitrate, nitrite, MAHs, pesticides, PAH, pH,

phenols, PCBs and VHCs. Given their low frequency and the lack of detections, a low duplicate count for these analytes does not adversely impact the results of the investigation; and

- As outlined in OTEK's 2005 Area 4 ESA Scope of Works, Sub-Area 4A sampling was conducted congruently with sampling in other sub-areas. Therefore, the frequency of duplicate sampling should be calculated based on the entire sampling area. When all samples are accounted for, an appropriate number of duplicate samples were collected.

Based on this, these reduced frequencies are not considered likely to impact the conclusions of this report. Sampling pairs and duplicate frequencies are summarised in the tables included as Appendix J.

12.2.3 Duplicate Sample RPD Results

12.2.3.1 Blind Duplicates

RPDs were greater than 50% for the following:

- Cobalt (90%) and mercury (100%) for 4A/QS-12; and
- Mercury (133%) for 4A/VS/QS-1.

The elevated RPDs are likely a result of:

- Analyte concentrations that are at or near the laboratory reporting limit; and/or
- Heterogeneity of the sample matrix.

Given the absence of guideline exceedances, the results do not affect the conclusions of this report. All other blind duplicate sampling results indicated good agreement between the primary and quality samples, with no other RPDs greater than 50%.

12.2.3.2 Split Duplicates

RPDs were greater than 50% for the following:

- Chromium (RPD 60%), cobalt (96%) and nickel (64%) for 4A/QS-3A;
- Chromium (68%) for 4A/QS-5A; and
- Cobalt (70%) for 4A/QS12A.

The elevated RPDs are likely a result of:

- Analyte concentrations that are at or near the laboratory reporting limits;
- Heterogeneity of the sample matrix; and/or
- Different internal methodologies of the primary and secondary laboratories.

Given the absence of guideline exceedances, the results do not affect the conclusions of this report. All other split duplicate sampling results indicated good agreement between the primary and quality samples, with no other RPDs greater than 50%.

12.2.4 Blank Sample Results

None of the analytes tested for in any of the rinsate or trip blank samples were present at concentrations at or above laboratory reporting limits. These results indicate that cross contamination is unlikely to have occurred between samples or between sample locations.

12.3 Groundwater Duplicate and Blank Samples

12.3.1 Sampling Program

The following blind and split duplicate groundwater samples were collected for analysis:

- Two blind and two split duplicate samples.

The following rinsate and trip blank samples were collected for analysis during groundwater sampling:

- Three rinsate and four trip blank samples.

Overall, the QA/QC reports provided confidence in the results presented by the Laboratories. The laboratory analytical results for each Area 4 GME are attached as Appendix I.

12.3.2 Sampling Frequency

As it was during the soil sampling, Area 4 was treated as a single site during the GMEs. As such, Sub-Area 4A groundwater sampling was conducted congruently with groundwater sampling in other sub-areas. Duplicate and blank samples were collected for each day of sampling, but not for each individual sub-area. When treated as a whole, an appropriate number of blind and split duplicate samples (i.e.: >1 in 20 samples) were collected during groundwater sampling.

12.3.3 Duplicate Sample RPD Results

12.3.3.1 Blind Duplicates

Blind duplicate sampling results indicated good agreement between the primary and quality samples, with no RPDs greater than 50%.

12.3.3.2 Split Duplicates

RPDs were greater than 50% for the following:

- Arsenic (RPD 100%), chromium (186%) selenium (123%) and nitrate (101%) for 4A/QS-1A.

The elevated RPDs are likely a result of:

- Analyte concentrations that are at or near the laboratory reporting limits; and/or
- Different internal methodologies of the primary and secondary laboratories.

Given the absence of guideline exceedances, the results do not affect the conclusions of this report. Other split duplicate sampling results indicated good agreement between the primary and quality samples, with no other RPDs greater than 50%.

12.3.4 Blank Sample Results

None of the analytes tested for in any of the rinsate or trip blank samples were present at concentrations at or above laboratory reporting limits. These results indicate that cross contamination is unlikely to have occurred between samples or between sample locations.

Note that attached analytical laboratory report EM0803020 contains results for samples from Sub-Area 4A as well as 4B. The 4B results are not relevant to 4A and are not discussed.

12.4 Sub-Area 4A DVR Results

Table M outlines the DVRs created for the related primary/secondary laboratories and provides comment/explanation of discrepancies observed during OTEKs internal audit of the lab certificates received from the primary and secondary laboratories. The information in Table M has been transposed from comments made in the original DVR sheets. Table M is to be read in conjunction with the original DVR and relevant laboratory reports, provided in Appendix I, for a detailed understanding of each specific item.

Table M: DVR Summary & Internal Laboratory QA/QC Discrepancies

Laboratory		DVR Pass or Fail	Comments/Explanation for QA/QC Discrepancies
Primary	Quality/ Secondary		
Grid and Target Samples Pre April 2008			
EM0802745 (ALS)	8ENME0009483/ 08ENME0009756 (Amdel)	Pass (>95%)	• 4A/QS-3A RPDs for chromium, cobalt and nickel were 60%, 96% and 64%, respectively. • 4A/QS-5A RPD for chromium was 68% • No data provided from Amdel for laboratory internal duplicates or laboratory internal matrix spike recovery. • Fourteen out of 64 (22%) analytes did not meet data quality objectives for internal lab matrix spike recoveries. • The ALS analytes which failed for matrix spike recoveries were total metals, OCP, phenolics, PAH and TPH for a number of different samples. • Nineteen samples were out of holding time for pH, four samples for TPH, two samples for PAHs and two samples for both cyanide and total fluoride. Due to the absence of PAH, TPH and fluoride contamination in samples within Sub-Area 4A, the holding time exceedances are not considered to affect the outcome of this report. • The temperature of the samples recorded by the laboratory were slightly above the recommended storage 4^{o}C. This is not considered to affect the results as the PID did not detect any volatiles and there were no specific sources of VOCs or other organics identified during sampling. • Samples 4A/G26/0.25, 4A/G26/0.5, 4A/G26/1.0, 4A/TB-1, 4A/RB-1, 4A/TB-3, 4A/TB-4 and 4A/RB-4 were analysed but are not on the COC. Analysis of these samples was requested after submittal to the laboratory. Thus the analysis is not recorded on the COCs. • Samples 4A/G37/0.25 and 4A/G57/0.25 correspond to laboratory IDs 238 and 250, respectively. This is listed on the SRN. • Manganese in sample 4A/C1 failed laboratory duplicate RPD while barium in sample 4A/C1 failed the laboratory reporting limit. This is likely due to sample heterogeneity. • The sample date recorded on the holding time report for 4A/TB-3 and 4A/RB-3 is 15/04/2008, rather than 09/04/2008. As a result, ALS does not report a holding time breach for PAHs. Similarly, the sample date recorded on the holding time report for 4A/TB-4 and 4A/RB-4 is 15/04/2008, rather than 10/04/2008 and the holding time breach has not been captured. The holding time breach is not considered to affect the outcome of the results as there were no specific sources of PAHs identified during fieldworks and there were no PAH exceedances within Sub - Area 4A
EM0802914 (ALS)	N/A	Pass (>95%)	• QA/QC sampling and field blank sampling has been undertaken based on overall batch size and volume for Sub-Area 4, rather than individual analytical reports. • The temperature of the samples recorded by the laboratory was slightly above the recommended 4^{o}C. This is not considered to affect the results as the PID did not detect any volatiles and there were no sources of VOCs or other organics identified during the time of sampling.

Laboratory		DVR Pass or Fail	Comments/Explanation for QA/QC Discrepancies
Primary	Quality/ Secondary		
Grid and Target Samples Post April 2008			
09ENME0005503 Labmark	N/A	Pass (>95%)	• QA/QC sampling and field blank sampling has been undertaken based on overall batch size and volume for Sub-Area 4, rather than individual analytical reports. • Analysis for 3-clorophenol and 4-chlorophenol fell outside the acceptable laboratory control spike OTEK range of <70% or >130%
09ENME0005084 Labmark	EM091295 (ALS)	Pass (>95%)	• 4A/QS-12 RPDs for cobalt and mercury were 90% and 100%, respectively. • 4A/QS-12A RPDs for boron, cobalt and mercury were 183%, 70% and 108%, respectively. • Matrix spike not determined for zinc and manganese for 4A/QS-12A because background levels were greater than or equal to four times the spike level.
Validation Samples			
EM0906990 Labmark	N/A	Pass (>95%)	• QA/QC sampling and field blank sampling has been undertaken based on overall batch size and volume for Sub-Area 4, rather than individual analytical reports. • Five spike recoveries were less than 70%, yet all of these were still within acceptable laboratory limits for the particular analytes.
EM0907069 Labmark	N/A	Pass (>95%)	• QA/QC sampling and field blank sampling has been undertaken based on overall batch size and volume for Sub-Area 4, rather than individual analytical reports. • 6 spike recovery percentages were less than 70%, all of these were still within acceptable laboratory limits for the particular analytes: organochlorine presticides
EM1011259 Labmark	N/A	N/A	• Asbestos samples only, no quality samples.
Well Installation Samples			
EM0910684 (ALS)	09ENME0038575 Labmark	Pass (>95%)	• Primary laboratory exceedances of RPD>50% for an anonymous samples for phenanthrene (53.9%), flouranthene (58.9%), benz(a)anthracene (94.1%), chrysen (75%), benzo(b)flouranthene (63.2%), benzo(k)flouranthene (79.6%), benzo(a)pyrene (58.5%), indeno (1.2.3.cd)perylene (57.6%), benzo(g.h.i)perylene (53.0%). • Acenaphthylene exceeded spike recovery range (131%)
09ENME0004793 (Labmark)	N/A	Pass (>95%)	• QA/QC sampling (1 in 20, 5%) and field blank sampling has been undertaken based on overall batch size and volume for Sub-Area 4, rather than individual analytical reports. • 1 analyte within Phenols fell ouside the OTEK acceptable range of 70%-130% for spike recovery. And 2 analytes within Phenols fell outside the OTEK acceptable range of 70%-130% for Matrix spikes
Groundwater Monitoring Well Samples			
EM0912070 (ALS)	09ENME0044068 LabMark	Pass (>95%)	• A4/QS-1A - four exceedances for arsenic, total chromium, selenium and nitrate as N, with RPDs of >100%, >186%, >123% and 101% respectively. • A4/MW-1 - 8 samples breached ALS holding times by 4-6 days for pH analysis.
EM1114048 (ALS)	GS11486 Groundswell	Pass (>95%)	• QW1-081211 - exceedance for cobalt with an RPD of 67%. • QW-1A-081211 exceedance for nitrate (as N) with an RPD of 125%. • All samples were received within holding times for nitrate and nitrite however exceeded holding times for analysis by the laboratory • QA/QC sampling (1 in 20, 5%) and field blank sampling has been undertaken based on overall batch size and volume for Sub-Area 4, rather than individual analytical reports.

12.5 Statement of Analytical Reliability

After analysis of the potential quality issues highlighted above, OTEK considers the site analytical data to be reliable for the purposes of the investigation works undertaken during each sampling event. This is based on:

- High level of QA checks and procedures undertaken during the entire project;
- Works undertaken in accordance with the revised SAP and relevant guidelines; and
- Outcome of QC sampling, which reflects adequate procedures were undertaken during the works.

Additionally, given the above, the consistency of the results across the site and in comparison to results across the larger Riverwalk area, the absence of impacts or conditions considered to present an unacceptable ecological or human health risk and the overall reliability of the laboratory data as shown through a review of each lab report and presented on the DVRs, the instances where samples were analysed outside of holding time do not impact on the conclusions of the report.

13 Discussion of Results

13.1 Soil

The potential impact that soil analytical results pose to each recognised beneficial use of the site is discussed below.

13.1.1 Maintenance of Ecosystems

Barium, manganese, nickel and vanadium concentrations for some individual natural soil samples exceeded the NEPM EIL criteria. These exceedances, the works they were associated with, and their significance, are presented below:

- **Grid sample barium exceedances:** Given the absence of any specific identified source of barium, the fact that barium is known to be present at elevated concentrations in the soil of the region, the similarity of the results to other Riverwalk areas, and the fact that barium concentrations are within typical background ranges, these results are considered to represent background conditions and not anthropogenic impacts. Refer to section 9.1.8.6 for the results of a 95% upper confidence level (UCL) analysis which provides still another line of evidence supporting this conclusion. The result of the statistical analysis indicates with 95% confidence that the average barium concentration is at or below the adopted criteria.
- **Target sample barium exceedance:** As discussed above, the target sample was located in the wrong area, and is therefore not associated with any past site infrastructure. Given the absence of any identified source, and the similarity of the result to the grid pattern sample, this result is considered to represent background conditions. These results have been included in the 95% UCL calculation presented in section 9.1.8.6. The result of the statistical analysis indicates with 95% confidence that the average barium concentration is at or below the adopted criteria.
- **Composite sample vanadium exceedances:** Only vanadium results exceeded the standard EILs. Given the absence of any specific identified source of vanadium, the fact that vanadium is known to be present at elevated concentrations in the soil of the region, the similarity of the results to other Riverwalk areas, and the fact that vanadium concentrations are within typical background ranges, these results are considered to represent background conditions and not anthropogenic impacts.
- **Composite sample - all other exceedances:** For all other exceedances identified in the composite samples, it is noted that the frequency of exceedances is greater than that for all types of individual samples (grid, target, validation, soil boring). As the composite sample exceedances only occur as a result of the EIL for each analyte being reduced to 1/3 of the standard EIL, it is considered likely that reducing the EIL was an overly conservative approach that does not accurately represent ecological risk at the site. These concentrations are considered to be representative of natural background barium concentrations. No individual samples were analysed. However, based on the number of individual samples analysed, and on the conclusion that the reduced EIL was overly conservative, this does not impact on the conclusions of the report.
- **Validation sample barium exceedance:** The validation sample was collected from natural soil underlying the soak pit following the removal of the basalt gravel and cobbles that constituted the soak pit. Although metals in general were identified as a COPC for this infrastructure, this was associated with the potential for sludge to be present. As no sludge was present and the infrastructure was identified as consisting only of basalt gravel, cobbles and gravel, the potential for metal impacts associated with sludge is no longer relevant. Barium concentrations in all other

validation samples were below EILs. The single result may be associated with high barium content in the basalt or with an error in sampling or laboratory analysis. As the conditions and material across the septic and soak pit were consistent, there were no signs of impacts to underlying soil at any location, and the validation sampling showed that barium was not generally elevated, the single elevation is considered to be an anomaly. Although the specific cause of the concentration cannot be definitively identified, the single anomaly is not considered to be significant or to impact the conclusions of the report.

- **Soil boring samplke manganese, nickel and vanadium exceedances:** All the listed exceedances were identified at depths between 3.0 and 12.0mBGS. Given the depths, the absence of any evidence of impacts at these depths, the absence of shallower impacts and the absence of evidence for any potential for impacts to have migrated to these depths, the exceedances are considered to represent background conditions.

Some of the exceedances are considered to represent background conditions and not anthropogenic impacts. To support this, Table N presents background metal concentrations reported in natural soil samples collected from other sub-areas.

Table N: Metal Concentration Ranges

Metal	NEPM Background Range	Concentration Ranges per Sub-Area					
		4A	4B	4C	4F	4G	4I
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Barium	100 – 3000	20 - 540	27 - 220	9 - 580	23 - 420	48 - 330	40 - 460
Manganese	850	90 - 396	120 - 780	2 - 410	110-760	93 - 410	128 - 510
Nickel	5 – 500	15 - 58	13 - 120	14 - 54	11-31	15 – 40	21 - 49
Vanadium	20 – 500	22 - 53	17 - 62	16 - 63	12-66	5 - 60	32 - 69

These metals are considered to be present at background levels. This conclusion is based on the following:

- Background concentrations of barium, manganese, nickel, and vanadium are known to occur in the Werribee region and have been identified during assessments carried out on the greater Riverwalk development. These background concentrations are associated with natural geological conditions present in the Newer Volcanics formation, of which the Sub-Area 4A site is native;
- All manganese and nickel exceedances occurred at depths of 3.0 to 12.0mBGS during soil boring sampling. There is no identified potential mechanism for anthropogenic activities to have affected soil at these depths and/or at these locations;
- The metals are distributed consistently across the site and surrounding Riverwalk sub-areas;
- The select metal concentrations were above NEPM EIL criteria, but were within published NEPM background ranges. The only exception was a manganese concentration of 900mg/kg (background range is up to 850mg/kg) at a depth of 10mBGS in the soil boring completed as MW-7. Given its depth this is also considered to be background; and
- Testing locations that targeted former infrastructure had similar metal concentrations as grid pattern locations that were not targeting a potential source of anthropogenic impacts. Additionally, although metals in general were identified as a COPC, no specific identified sources of barium, manganese, nickel or vanadium impacts have been identified.

Based on the above lines of evidence, none of the EIL exceedances are considered to have resulted from anthropogenic activity and therefore do not constitute contamination and do not require further assessment or remediation.

13.1.2 Human Health

There are no contaminant concentrations at the site which exceed NEPM HILs. In view of this, the beneficial use 'human health' is considered to be protected at the site.

13.1.3 Buildings & Structures

Sulphate and pH results were compared with the exposure classification for concrete piles presented in the Australian Standard AS 2159 - 2009. The results indicate that the soil at the site is not corrosive and will not adversely affect the integrity of structures or buildings. All pH values at the site were above 5.5 which, according to the Exposure Classification for Concrete Piles – Piles in Soil (2009), indicates "non-aggressive" soil conditions.

13.1.4 Aesthetics

No offensive odours were observed in test pits, soil borings or trenches excavated at the site. The surface of the site was free of debris. There are therefore no aesthetic concerns associated with the condition of the site.

13.1.5 Production of Food, Flora & Fibre

The only identified instance where this beneficial use would apply to the site is in the case of home-grown produce. The use of NEPM HIL A criteria was considered appropriate to assess this scenario. As there were no concentrations exceeding NEPM HIL A, this beneficial use is protected in Sub-Area 4A.

13.2 Groundwater

The potential impact that groundwater analytical results pose to each recognised beneficial use of the site is discussed below.

There is one analytical result that cannot be compared to any beneficial use guideline. Diesel range TPH carbon fraction C_{15} to C_{20} was reported in MW-8 at a concentration of 300µg/L during the 25 November 2009 GME. As there are no directly applicable guidelines for this TPH carbon fraction, the following qualitative assessment of this impact is provided:

- The result indicates minor residual impacts associated with the former underground petroleum storage;
- The single identified concentration is considered to be low-level, the health risk associated with this TPH range is low, the extent of the impact appears to be limited and the source of contamination has been removed; and
- A subsequent GME conducted on 7 December 2011 did not identify any TPH concentrations at or above laboratory reporting limits.

Therefore the result likely would not preclude any beneficial use or the future redevelopment of the site. No other TPH or BTEX concentrations were identified at or above the laboratory reporting limit.

13.2.1 Maintenance of Ecosystems

13.2.1.1 Boron, Copper, Nickel and Zinc

Copper, nickel and zinc concentrations exceeded the Maintenance of Ecosystem criteria. Table O summarises groundwater results from other sub-areas for comparison purposes.

Table O: Area 4 Metals Concentrations

Sample Identification		Location in relation to Sub-Area 4A (m)	Sample Date	Boron	Copper	Nickel	Zinc
Area	Well ID			µg/L	µg/L	µg/L	µg/L
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality							
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values				370	1.4	11	8
4E	MW-1	750m northeast (background)	22/08/07	380	<10	16	21
4E	MW-1		14/11/07	350	<10	<5	15
4E	MW-1		05/02/08	350	<10	<5	11
4E	MW-1		26/11/2009	320	4	7	13
4D	MW-2	400m east (down gradient)	22/08/07	220	<10	20	24
4D	MW-2		14/11/07	190	<10	<5	11
4D	MW-2		04/02/08	170	<10	<5	31
4D	MW-2		26/11/2009	220	10	19	41
4B	MW-3	250m east (down gradient)	23/08/07	120	<10	14	12
4B	MW-3		15/11/07	100	<10	7	63
4B	MW-3		05/02/08	80	<10	<5	25
4B	MW-3		25/11/2009	140	5	11	14
4C	MW-4	250m southeast (down gradient)	24/08/07	110	<10	11	20
4C	MW-4		15/11/07	80	15	10	81
4C	MW-4		05/02/08	70	<10	<5	66
4C	MW-4		25/11/2009	120	1	13	14
4D	MW-5	50m north (background)	23/08/07	250	<10	14	21
4D	MW-5		14/11/07	270	11	<5	39
4D	MW-5		05/02/08	190	<10	<5	30
4D	MW-5		27/11/2009	320	12	2	31
4H	MW-6	400m north (background)	23/08/07	310	<10	26	30
4H	MW-6		14/11/07	290	158	24	331

Sample Identification		Location in relation to Sub-Area 4A (m)	Sample Date	Boron	Copper	Nickel	Zinc
Area	Well ID			µg/L	µg/L	µg/L	µg/L
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality							
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values				370	1.4	11	8
4H	MW-6		05/02/08	290	11	<5	34
4H	MW-6		27/11/2009	300	1.4	19	31
4A	MW-7	-	26/11/2009	260	3	31	18
4A	MW-7		7/12/2011	290	4	12	20
4A	MW-8		25/11/2009	430	4	27	9
4A	MW-8		7/12/2011	450	5	7	19
4B	MW-9	100m east (down gradient)	25/11/2009	190	10	47	18
4B	MW-10	100m east (down gradient)	25/11/2009	160	8	34	22
4B	MW-11	100m east (down gradient)	25/11/2009	190	8	22	16

No specific sources of copper, nickel or zinc contamination have been identified at the site and the concentrations are generally consistent across the entire Riverwalk area. Therefore, the concentrations are considered to be representative of natural background conditions.

Boron was reported at concentrations above the Maintenance of Ecosystem criteria, and at concentrations above all other Riverwalk area wells. This is not considered to be significant given the following multiple lines of evidence:

- Boron was not reported in soils at concentrations that would likely represent anthropogenic contamination, there is therefore no soil boron source that would have migrated to groundwater;
- Area 1 is upgradient of MW-8 and no sources of boron or boron impacts were identified in this area;
- The boron concentrations across the Riverwalk area have ranged from 70µg/L in MW-4 to 450µg/L in MW-8, indicating that boron conditions fluctuate naturally over a range concentrations;
- The highest concentration of boron was reported in the upgradient wells, demonstrating that the concentration is representative of regional background conditions; and
- The more downgradient wells have reduced concentrations, indicating that the higher concentrations are not spatially extensive or consistent, and also indicating that groundwater discharged to the Werribee River would not impact beneficial uses.

As there is no specific identified source of boron at the site, and no evidence of anthropogenic contamination, the concentrations identified are considered to be natural background conditions. The elevated concentrations are not considered to present an unacceptable ecological or human health risk.

13.2.1.2 Nitrate

The nitrate concentrations encountered in each well are consistent with those measured in groundwater at the Riverwalk site. Table P indicates nitrate concentrations reported in various Area 4 sub-areas.

Table P: Concentrations of Nitrate in Groundwater within Area 4

Sample Identification		Sample Date	Nitrate as N
Sub-Area	Well ID		(mg/L)
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters			
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values			0.7
4E	MW-1	22/08/2007	5.82
4E	MW-1	26/11/2009	5.19
4D	MW-2	22/08/2007	4.44
4D	MW-2	26/11/2009	3.87
4B	MW-3	23/08/2007	4.07
4B	MW-3	25/11/2009	4.01
4C	MW-4	24/08/2007	7.19
4C	MW-4	25/11/2009	3.72
4D	MW-5	23/08/2007	5.03
4D	MW-5	27/11/2009	1.28
4H	MW-6	23/08/2007	2.97
4H	MW-6	27/11/2009	3.14
4A	MW-7	26/11/2009	2.69
4A	MW-8	25/11/2009	1.31
4A	MW-7	7/12/2011	2.32
4A	MW-8	7/12/2011	4.21
4B	MW-9	25/11/2009	1.25
4B	MW-10	25/11/2009	1.48
4B	MW-11	25/11/2009	1.43

Concentrations above the assessment criterion were consistently reported for all wells for all GMEs. The concentrations are considered to be representative of regional nitrate concentrations and may be background concentrations or a result of regional agriculture activities. The conditions therefore do not warrant further monitoring or remediation.

13.2.2 Stock Watering

The concentrations of potential contaminants in the groundwater samples were below the adopted criteria for Stock Watering. In view of this, the Stock Watering beneficial use is considered to be protected.

13.2.3 Industrial Water Use

The naturally elevated metal concentrations and high salinity may render regional groundwater unsuitable for use in many industrial processes if not treated. The suitability of the groundwater for a particular industrial process would need to be evaluated should the use of groundwater for industrial purposes be considered in the future. The former use of the site is not considered to have impacted upon this beneficial use.

13.2.4 Primary Contact Recreation

Manganese was reported in MW-8 at a concentration of 743µg/L in November 2009. This concentration exceeded the primary contact recreation (Raw Water x 1) criterion of 100µg/L. The subsequent manganese concentration reported for this well was 9µg/L. Manganese results for MW-9 to MW-11 ranged from 98 to 137µg/L on this sampling date while the manganese result for MW-4 was 861µg/L. All other manganese results from all other wells and sampling dates ranged from <0.1 to 32. The high concentrations reported in November 2009 for five wells appear to be anomalous and do not accurately represent site conditions. The single elevated concentration in MW-8 is not considered to represent contamination.

Sulphate was reported in MW-7 at a concentration of 458mg/L, slightly exceeding the primary contact recreation (Raw Water x 1) criterion of 400 mg/L. Selenium was reported in QS-1A (triplicate of MW-8) at a concentration of 42µg/L exceeding the primary contact recreation (Raw Water x 1) criterion of 10µg/L.

As described in ANZECC 1992, if a factor of 20 is applied to the guideline values due to less than 2L of water being ingested per swimming session, the reported concentrations do not exceed the criteria. Given the availability of town water, the low yield of the aquifer and significant cost of bore installation, it is considered unlikely that widespread use of groundwater for recreational purposes would occur as part of the proposed residential development of the site. In view of these points, the beneficial use ‘Primary Contact Recreation’ is not considered to be precluded.

13.2.5 Buildings and Structures

Sulphate and pH results were compared with the exposure classification for concrete piles presented in the Australian Standard AS 2159 - 2009. The results indicate that the groundwater at the site is not corrosive and would not adversely affect the integrity of structures or buildings.

Based upon the groundwater monitoring results, and the depth to groundwater at the site, groundwater at the site is not considered to pose a risk to future buildings and structures on the property.

14 Conclusions

A comprehensive soil and groundwater investigation was completed within Area 4 Sub-Area 4A. Where exceedances of the beneficial use criteria for land or groundwater were reported, these concentrations have been reasoned to be representative of background conditions and to not represent anthropogenic impacts or a significant risk to the future use of the site.

Based on the results of the ESA, the following conclusions are made:

- The site was assessed in accordance with applicable guidelines and the approved SAP;
- The quality of the data is reliable and representative;
- Metals concentrations above the assessment criteria in some samples have been demonstrated to be within typical background concentrations for the region;
- None of the beneficial uses of land and groundwater are precluded as a result of historical land use; and
- The CSM shows that there are no existing sources of contamination.

Based on this:

- No further investigation or remediation works are considered necessary; and
- The condition of the site is considered suitable for the intended low density residential use.

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16 Limitations

We do not make any representation or warranty that the conclusions in this report will be applicable in the future as there may be changes to legislation, the operating requirements of Melbourne Water, the condition of the site, or other factors that would affect the conclusions contained in this report.

OTEK has used a degree of skill and care ordinarily exercised by reputable members of our profession practicing in the same or similar locality. Conclusions are based on representative information gathered during various field investigations and desktop audit of investigations undertaken at the Riverwalk Area 4 site.

This report has been prepared for Melbourne Water and GHD Pty Ltd and for the specific purpose to which it refers. No responsibility is accepted to any third party and neither the whole of the report or any part or reference thereto may be published in any document, statement or circular nor in any communication with third parties without our prior written approval of the form and context in which it will appear.

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Tables

Table 1
Composite Sample Identification
Sub-Area 4A ESA
Melbourne Water, Werribee, Victoria

Composite Sample Identification	Sample Depth (mBGS)	Individual Samples in Composite Sample	Analytical Status
4A/C1	0.25	4A/G3/0.25, 4A/G5/0.25, 4A/G6/0.25	Analysed
4A/C2	0.50	4A/G3/0.5, 4A/G5/0.5, 4A/G6/0.5	Analysed
4A/C3	1.00	4A/G3/1.0, 4A/G5/1.0, 4A/G6/1.0	Analysed
4A/C4	0.25	4A/G2/0.25, 4A/G7/0.25, 4A/G10/0.25	Analysed
4A/C5	0.50	4A/G2/0.5, 4A/G7/0.5, 4A/G10/0.5	Analysed
4A/C7	0.25	4A/G8/0.25, 4A/G12/0.25, 4A/G13/0.25	Analysed
4A/C6	1.00	4A/G2/1.0, 4A/G7/1.0, 4A/G10/1.0	On Hold
4A/C8	0.50	4A/G8/0.5, 4A/G12/0.5, 4A/G13/0.5	Analysed
4A/C9	1.00	4A/G8/1.0, 4A/G12/1.0, 4A/G13/1.0	Analysed
4A/C10	0.25	4A/G14/0.25, 4A/G15/0.25, 4A/G18/0.25	Analysed
4A/C11	0.50	4A/G14/0.5, 4A/G15/0.5, 4A/G18/0.5	Analysed
4A/C12	1.00	4A/G14/1.0, 4A/G15/1.0, 4A/G18/1.0	On Hold
4A/C13	0.25	4A/G17/0.25, 4A/G19/0.25, 4A/G20/0.25	Analysed
4A/C14	0.50	4A/G17/0.5, 4A/G19/0.5, 4A/G20/0.5	Analysed
4A/C15	1.00	4A/G17/1.0, 4A/G19/1.0, 4A/G20/1.0	Analysed
4A/C16	0.25	4A/G22/0.25, 4A/G24/0.25, 4A/G25/0.25	Analysed
4A/C17	0.50	4A/G22/0.5, 4A/G24/0.5, 4A/G25/0.5	Analysed
4A/C18	1.00	4A/G22/1.0, 4A/G24/1.0, 4A/G25/1.0	Analysed
4A/C19	0.25	4A/G27/0.25, 4A/G29/0.25, 4A/G30/0.25	Analysed
4A/C20	0.50	4A/G27/0.5, 4A/G29/0.5, 4A/G30/0.5	Analysed
4A/C21	1.00	4A/G27/1.0, 4A/G29/1.0, 4A/G30/1.0	Analysed
4A/C22	0.25	4A/G31/0.25, 4A/G34/0.25, 4A/G35/0.25	Analysed
4A/C23	0.50	4A/G31/0.5, 4A/G34/0.5, 4A/G35/0.5	Analysed
4A/C24	1.00	4A/G31/1.0, 4A/G34/1.0, 4A/G35/1.0	Analysed
4A/C25	0.25	4A/G32/0.25, 4A/G36/0.25, 4A/G37/0.25	Analysed
4A/C26	0.50	4A/G32/0.5, 4A/G36/0.5, 4A/G37/0.5	Analysed
4A/C27	1.00	4A/G32/1.0, 4A/G36/1.0, 4A/G37/1.0	Analysed
4A/C28	0.25	4A/G38/0.25, 4A/G39/0.25, 4A/G44/0.25	Analysed
4A/C29	0.50	4A/G38/0.5, 4A/G39/0.5, 4A/G44/0.5	Analysed
4A/C30	1.00	4A/G38/1.0, 4A/G39/1.0, 4A/G44/1.0	Analysed
4A/C31	0.25	4A/G41/0.25, 4A/G42/0.25, 4A/G46/0.25	Analysed
4A/C32	0.50	4A/G41/0.5, 4A/G42/0.5, 4A/G46/0.5	Analysed
4A/C33	1.00	4A/G41/1.0, 4A/G42/1.0, 4A/G46/1.0	On Hold
4A/C34	0.25	4A/G43/0.25, 4A/G47/0.25, 4A/G48/0.25	Analysed
4A/C35	0.50	4A/G43/0.5, 4A/G47/0.5, 4A/G48/0.5	Analysed
4A/C36	1.00	4A/G43/1.0, 4A/G47/1.0, 4A/G48/1.0	Analysed
4A/C37	0.25	4A/G45/0.25, 4A/G50/0.25, 4A/G52/0.25	Analysed
4A/C38	0.50	4A/G45/0.5, 4A/G50/0.5, 4A/G52/0.5	Analysed
4A/C39	1.00	4A/G45/1.0, 4A/G50/1.0, 4A/G52/1.0	On Hold
4A/C40	0.25	4A/G53/0.25, 4A/G54/0.25, 4A/G60/0.25	Analysed
4A/C41	0.50	4A/G53/0.5, 4A/G54/0.5, 4A/G60/0.5	Analysed
4A/C42	1.00	4A/G53/1.0, 4A/G54/1.0, 4A/G60/1.0	Analysed
4A/C43	0.25	4A/G55/0.25, 4A/G61/0.25, 4A/G62/0.25	Analysed
4A/C44	0.50	4A/G55/0.5, 4A/G61/0.5, 4A/G62/0.5	Analysed
4A/C45	1.00	4A/G55/1.0, 4A/G61/1.0, 4A/G62/1.0	On Hold
4A/C46	0.25	4A/G56/0.25, 4A/G57/0.25, 4A/G58/0.25	Analysed
4A/C47	0.50	4A/G56/0.5, 4A/G57/0.5, 4A/G58/0.5	Analysed
4A/C48	1.00	4A/G56/1.0, 4A/G57/1.0, 4A/G58/1.0	Analysed
		Total composite samples collected	**48**
		Total composite amples analysed	**43**

Notes: mBGS = metres below ground surface.

Table 2
Soil Analytical Summary
Heavy Metals and pH
Sub-Area 4A ESA - Composite Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	pH (lab)	Metals																	
				Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (total)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc
			pH units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM Background Range			*	*	1-50	100-3000	*	*	1	5-1000	1-40	2-100	2-200	850	0.03	*	5-500	*	*	20-500	10-300
NEPM 1999 EIL[1] (divided by 3)			*	*	6.66	100	*	*	1	*	*	33.3	200	167	0.33	*	20	*	*	16.6	66.6
NEPM 1999 HIL A[2] (divided by 3)			*	*	*33.33*	*	*6.66*	*1000*	*6.66*	*	*33.33*	*333.3*	*100*	*500*	*5*	*	*200*	*	*	*	*2333*
Laboratory Methodology (ALS)			E2600	EG005T											EG035T	EG005T					
4A/C1	0.25	8-Apr-08	8.1	<5	6	80	<1	<50	<1	39	16	18	14	332	<0.1	<2	29	<5	<5	42	42
4A/C2	0.50	8-Apr-08	7.3	<5	7	130	<1	<50	<1	43	14	23	12	247	<0.1	<2	36	<5	<5	47	42
4A/C3	1.00	8-Apr-08	-	<5	7	120	<1	<50	<1	35	14	19	10	258	<0.1	<2	35	<5	<5	40	42
4A/C4	0.25	9-Apr-08	-	<5	6	270	<1	<50	<1	36	14	16	14	464	<0.1	<2	26	<5	<5	42	36
4A/C5	0.50	9-Apr-08	-	<5	6	120	<1	<50	<1	37	13	19	10	248	<0.1	<2	33	<5	<5	41	39
4A/C7	0.25	9-Apr-08	-	<5	6	70	<1	<50	<1	37	13	16	15	361	<0.1	<2	24	<5	<5	42	39
4A/C8	0.50	9-Apr-08	-	14	6	140	<1	<50	<1	34	14	20	10	271	<0.1	<2	37	<5	<5	40	42
4A/C9	1.00	9-Apr-08	9.2	<5	7	70	<1	<50	<1	31	13	18	9	271	<0.1	<2	34	<5	<5	37	42
4A/C10	0.25	10-Apr-08	-	<5	<5	330	1	60	<1	38	14	14	10	239	<0.1	<2	22	<5	<5	53	17
4A/C11	0.50	10-Apr-08	-	<5	<5	320	1	70	<1	42	13	15	10	264	<0.1	<2	22	<5	<5	60	18
4A/C13	0.25	10-Apr-08	-	<5	<5	100	<1	<50	<1	28	9	17	15	235	<0.1	<2	22	<5	<5	30	35
4A/C14	0.50	10-Apr-08	9.3	<5	7	160	<1	<50	<1	36	16	25	13	306	<0.1	<2	39	<5	<5	43	46
4A/C15	1.00	10-Apr-08	-	<5	6	70	<1	<50	<1	28	12	16	9	248	<0.1	<2	31	<5	<5	35	40
4A/C16	0.25	11-Apr-08	-	<5	5	70	<1	<50	<1	51	10	23	23	300	0.2	<2	24	<5	<5	36	58
4A/C17	0.50	11-Apr-08	-	<5	5	70	<1	<50	<1	39	10	17	14	236	<0.1	<2	24	<5	<5	44	39
4A/C19	0.25	14-Apr-08	-	<5	6	90	<1	<50	<1	35	13	21	19	378	<0.1	<2	26	<5	<5	39	46
4A/C20	0.50	14-Apr-08	-	<5	6	90	<1	<50	<1	34	13	16	14	342	<0.1	<2	24	<5	<5	38	41
4A/C21	1.00	14-Apr-08	-	<5	6	150	<1	<50	<1	34	14	17	11	340	<0.1	<2	31	<5	<5	41	38
4A/C22	0.25	14-Apr-08	7.5	<5	5	60	<1	<50	<1	40	10	17	18	276	<0.1	<2	22	<5	<5	38	45
4A/C23	0.50	14-Apr-08	-	<5	<5	40	<1	<50	<1	29	9	11	10	250	<0.1	<2	18	<5	<5	34	30
4A/C25	0.25	14-Apr-08	-	<5	6	80	<1	<50	<1	35	12	18	15	365	<0.1	<2	28	<5	<5	39	43
4A/C26	0.50	14-Apr-08	-	<5	14	70	<1	<50	<1	38	12	24	16	398	<0.1	<2	24	<5	<5	38	52
4A/C27	1.00	14-Apr-08	8.3	<5	6	70	<1	<50	<1	40	14	18	12	267	<0.1	<2	30	<5	<5	45	37
4A/C28	0.25	8-Apr-08	7.9	<5	<5	70	<1	<50	<1	30	10	14	12	289	<0.1	<2	24	<5	<5	35	34
4A/C29	0.50	8-Apr-08	-	<5	5	90	<1	<50	<1	35	12	15	12	278	<0.1	<2	24	<5	<5	41	35
4A/C30	1.00	8-Apr-08	-	<5	6	60	<1	<50	<1	36	13	20	11	235	<0.1	<2	33	<5	<5	40	42
4A/C31	0.25	8-Apr-08	7.8	<5	6	60	1	<50	<1	43	12	22	14	210	<0.1	<2	32	<5	<5	48	39
4A/C32	0.50	8-Apr-08	-	<5	6	110	<1	<50	<1	35	13	16	11	310	<0.1	<2	32	<5	<5	41	37
4A/C34	0.25	8-Apr-08	-	<5	6	70	<1	<50	<1	34	11	15	12	259	<0.1	<2	26	<5	<5	39	36
4A/C35	0.50	8-Apr-08	-	<5	<5	80	<1	<50	<1	35	11	16	13	264	<0.1	<2	25	<5	<5	37	37
4A/C36	1.00	8-Apr-08	-	<5	5	80	<1	<50	<1	32	11	15	9	193	<0.1	<2	28	<5	<5	38	36
4A/C37	0.25	7-Apr-08	-	<5	<5	80	<1	<50	<1	30	12	15	8	254	<0.1	<2	39	<5	<5	38	34
4A/C38	0.50	7-Apr-08	7.8	<5	5	180	1	<50	<1	35	18	26	9	284	<0.1	<2	55	<5	<5	45	40
4A/C40	0.25	8-Apr-08	-	<5	<5	40	<1	<50	<1	30	7	11	11	194	<0.1	<2	19	<5	<5	35	30
4A/C41	0.50	8-Apr-08	-	<5	5	100	<1	<50	<1	34	11	15	11	205	<0.1	<2	25	<5	<5	39	34
4A/C42	1.00	8-Apr-08	8.9	<5	6	150	<1	<50	<1	34	14	19	10	264	<0.1	<2	34	<5	<5	39	43
4A/C43	0.25	8-Apr-08	7.8	<5	<5	40	<1	<50	<1	31	9	12	10	181	<0.1	<2	23	<5	<5	35	31
4A/C44	0.50	8-Apr-08	-	<5	6	150	<1	<50	<1	42	12	19	11	209	<0.1	<2	33	<5	<5	46	37
4A/C46	0.25	15-Apr-08	-	<5	<5	40	<1	<50	<1	27	7	8	9	183	<0.1	<2	16	<5	<5	33	27
4A/C47	0.50	15-Apr-08	8.5	<5	7	70	1	<50	<1	49	21	23	12	223	<0.1	<2	34	<5	<5	52	36
4A/C48	1.00	15-Apr-08	-	<5	6	170	<1	<50	<1	32	14	17	10	275	<0.1	<2	33	<5	<5	36	36

Notes:

- mBGS = metres below ground surface.
- "*" = criteria or background range not specified.
- "-" = sample analysis not requested.
- < ## = analyte not detected at or above the laboratory reporting limit.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
Light shading indicates levels above NEPM EIL guidelines
Dark Shading indicates levels outside ANZECC 1992 Background levels

Table 3
Soil Analytical Summary
Polycyclic Aromatic Hydrocarbons (PAHs)
Sub-Area 4A ESA - Composite Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	PAH															
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo B fluoranthene	Benzo K fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 1999 HIL A[1] (divided by 3)			*	*	*	*	0.33	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)			EP075(SIM)B															
4A/C1	0.25	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C2	0.50	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C3	1.00	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C7	0.25	9-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C9	1.00	9-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C11	0.50	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C13	0.25	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C15	1.00	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C18	1.00	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C19	0.25	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C23	0.50	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C24	1.00	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C28	0.25	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C29	0.50	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C30	1.00	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C34	0.25	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C35	0.50	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C36	1.00	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C40	0.25	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C41	0.50	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C42	1.00	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C46	0.25	15-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C47	0.50	15-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/C48	1.00	15-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes: - mBGS = metres below ground surface.
- <## = analyte not detected at or above the laboratory reporting limit.
- "*" = criteria not specified.
1) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Table 4
Soil Analytical Summary
Organochlorine and Organophosphate Pesticides (OCPs & OPPs)
Sub-Area 4A ESA - Composite Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	OCP																								OPP																					
			α-BHC	β-BHC	Aldrin	Aldrin + Dieldrin	β-BHC	cis-Chlordane	4,4-DDE	4,4 - DDD	4,4- DDT	DDT+DDD+DDE	Dieldrin	Alpha Endosulfan	Beta Endosulfan	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	trans-chlordane	Azinophos methyl	Bromophos - Ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Malathion	Parathion Methyl	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 1999 HIL A[1] (divided by 3)			*	*	*	3.33	*	*	*	*	*	66.7	*	*	*	*	*	*	*	*	3.33	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)			EP068A																							EP068B																					
4A/C1	0.25	08-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C2	0.50	08-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C9	1.00	09-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C14	0.50	10-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C22	0.25	14-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C27	1.00	14-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C28	0.25	08-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C30	1.00	08-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C38	0.50	07-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C42	1.00	08-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C43	0.25	08-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/C47	0.50	15-Apr-08	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05

Notes: - mBGS = metres below ground surface.
- <## = analyte not detected at or above lthe aboratory reporting limit.
- "*" = criteria not specified.
1) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Table 5

Grid Sample Identification

Sub-Area 4A ESA - Grid Samples

Melbourne Water, Werribee, Victoria

Grid Sample Identification	Sample Depth (mBGS)	Analytical Status	Grid Sample Identification	Sample Depth (mBGS)	Analytical Status
4A/G1/0.25	0.25	Analysed	4A/G25/0.25	0.25	On Hold
4A/G1/0.5	0.50	Analysed	4A/G25/0.5	0.50	On Hold
4A/G1/1.0	1.00	Analysed	4A/G25/1.0	1.00	On Hold
4A/G2/0.25	0.25	Analysed	4A/G26/0.25	0.25	Analysed
4A/G2/0.5	0.50	On Hold	4A/G26/0.5	0.50	Analysed
4A/G2/1.0	1.00	On Hold	4A/G26/1.0	1.00	Analysed
4A/G3/0.25	0.25	Analysed	4A/G27/0.25	0.25	On Hold
4A/G3/0.5	0.50	On Hold	4A/G27/0.5	0.50	On Hold
4A/G3/1.0	1.00	On Hold	4A/G27/1.0	1.00	On Hold
4A/G4/0.25	0.25	Analysed	4A/G28/0.25	0.25	Analysed
4A/G4/0.5	0.50	Analysed	4A/G28/0.5	0.50	Analysed
4A/G4/1.0	1.00	Analysed	4A/G28/1.0	1.00	Analysed
4A/G5/0.25	0.25	On Hold	4A/G29/0.25	0.25	Analysed
4A/G5/0.5	0.50	On Hold	4A/G29/0.5	0.50	On Hold
4A/G5/1.0	1.00	On Hold	4A/G29/1.0	1.00	On Hold
4A/G6/0.25	0.25	Analysed	4A/G30/0.25	0.25	On Hold
4A/G6/0.5	0.50	On Hold	4A/G30/0.5	0.50	On Hold
4A/G6/1.0	1.00	On Hold	4A/G30/1.0	1.00	On Hold
4A/G7/0.25	0.25	Analysed	4A/G31/0.25	0.25	Analysed
4A/G7/0.5	0.50	On Hold	4A/G31/0.5	0.50	On Hold
4A/G7/1.0	1.00	On Hold	4A/G31/1.0	1.00	On Hold
4A/G8/0.25	0.25	On Hold	4A/G32/0.25	0.25	On Hold
4A/G8/0.5	0.50	On Hold	4A/G32/0.5	0.50	On Hold
4A/G8/1.0	1.00	On Hold	4A/G32/1.0	1.00	On Hold
4A/G9/0.25	0.25	Analysed	4A/G33/0.25	0.25	Analysed
4A/G9/0.5	0.50	Analysed	4A/G33/0.5	0.50	Analysed
4A/G9/1.0	1.00	Analysed	4A/G33/1.0	1.00	Analysed
4A/G10/0.25	0.25	Analysed	4A/G34/0.25	0.25	On Hold
4A/G10/0.5	0.50	On Hold	4A/G34/0.5	0.50	On Hold
4A/G10/1.0	1.00	On Hold	4A/G34/1.0	1.00	On Hold
4A/G11/0.25	0.25	Analysed	4A/G35/0.25	0.25	On Hold
4A/G11/0.5	0.50	Analysed	4A/G35/0.5	0.50	On Hold
4A/G11/1.0	1.00	Analysed	4A/G35/1.0	1.00	On Hold
4A/G12/0.25	0.25	On Hold	4A/G36/0.25	0.25	Analysed
4A/G12/0.5	0.50	On Hold	4A/G36/0.5	0.50	On Hold
4A/G12/1.0	1.00	On Hold	4A/G36/1.0	1.00	On Hold
4A/G13/0.25	0.25	Analysed	4A/G37/0.25	0.25	Analysed
4A/G13/0.5	0.50	On Hold	4A/G37/0.5	0.50	On Hold
4A/G13/1.0	1.00	On Hold	4A/G37/1.0	1.00	On Hold
4A/G14/0.1	0.10	Analysed	4A/G38/0.25	0.25	On Hold
4A/G14/0.25	0.25	On Hold	4A/G38/0.5	0.50	On Hold
4A/G14/0.5	0.50	On Hold	4A/G38/1.0	1.00	On Hold
4A/G14/1.0	1.00	On Hold	4A/G39/0.25	0.25	On Hold
4A/G15/0.25	0.25	On Hold	4A/G39/0.5	0.50	On Hold
4A/G15/0.5	0.50	On Hold	4A/G39/1.0	1.00	On Hold
4A/G15/1.0	1.00	On Hold	4A/G40/0.25	0.25	Analysed
4A/G16/0.25	0.25	Analysed	4A/G40/0.5	0.50	Analysed
4A/G16/0.5	0.50	Analysed	4A/G40/1.0	1.00	Analysed
4A/G16/1.0	1.00	Analysed	4A/G41/0.1	0.1	Analysed
4A/G17/0.25	0.25	On Hold	4A/G41/0.25	0.25	On Hold
4A/G17/0.5	0.50	On Hold	4A/G41/0.5	0.50	On Hold
4A/G17/1.0	1.00	On Hold	4A/G41/1.0	1.00	On Hold
4A/G18/0.25	0.25	Analysed	4A/G42/0.25	0.25	Analysed
4A/G18/0.5	0.50	On Hold	4A/G42/0.5	0.50	On Hold
4A/G18/1.0	1.00	On Hold	4A/G42/1.0	1.00	On Hold
4A/G19/0.25	0.25	Analysed	4A/G43/0.25	0.25	On Hold
4A/G19/0.5	0.50	On Hold	4A/G43/0.5	0.50	On Hold
4A/G19/1.0	1.00	On Hold	4A/G43/1.0	1.00	On Hold
4A/G20/0.25	0.25	On Hold	4A/G44/0.25	0.25	Analysed
4A/G20/0.5	0.50	On Hold	4A/G44/0.5	0.50	On Hold
4A/G20/1.0	1.00	On Hold	4A/G44/1.0	1.00	On Hold
4A/G21/0.25	0.25	Analysed	4A/G45/0.25	0.25	On Hold
4A/G21/0.5	0.50	Analysed	4A/G45/0.5	0.50	On Hold
4A/G21/1.0	1.00	Analysed	4A/G45/1.0	1.00	On Hold
4A/G22/0.25	0.25	On Hold	4A/G46/0.25	0.25	Analysed
4A/G22/0.5	0.50	On Hold	4A/G46/0.5	0.50	On Hold
4A/G22/1.0	1.00	On Hold	4A/G46/1.0	1.00	On Hold
4A/G23/0.25	0.25	Analysed	4A/G47/0.25	0.25	On Hold
4A/G23/0.5	0.50	Analysed	4A/G47/0.5	0.50	On Hold
4A/G23/1.0	1.00	Analysed	4A/G47/1.0	1.00	On Hold
4A/G24/0.25	0.25	On Hold	4A/G48/0.25	0.25	On Hold
4A/G24/0.5	0.50	On Hold	4A/G48/0.5	0.50	On Hold
4A/G24/1.0	1.00	On Hold	4A/G48/1.0	1.00	On Hold

Notes: mBGS = metres below ground surface.
blue shading indicates sample collected in fill

Table 5

Grid Sample Identification

Sub-Area 4A ESA - Grid Samples

Melbourne Water, Werribee, Victoria

Grid Sample Identification	Sample Depth (mBGS)	Analytical Status	Grid Sample Identification	Sample Depth (mBGS)	Analytical Status
4A/G49/0.25	0.25	Analysed	4A/G57/1.0	1.00	On Hold
4A/G49/0.5	0.50	Analysed	4A/G58/0.25	0.25	On Hold
4A/G49/1.0	1.00	Analysed	4A/G58/0.5	0.50	On Hold
4A/G50/0.25	0.25	Analysed	4A/G58/1.0	1.00	On Hold
4A/G50/0.5	0.50	Analysed	4A/G59/0.25	0.25	Analysed
4A/G50/1.0	1.00	Analysed	4A/G59/0.5	0.50	Analysed
4A/G51/0.25	0.25	On Hold	4A/G59/1.0	1.00	Analysed
4A/G51/0.5	0.50	On Hold	4A/G60/0.25	0.25	On Hold
4A/G51/1.0	1.00	On Hold	4A/G60/0.5	0.50	On Hold
4A/G52/0.25	0.25	On Hold	4A/G60/1.0	1.00	On Hold
4A/G52/0.5	0.50	On Hold	4A/G61/0.25	0.25	On Hold
4A/G52/1.0	1.00	On Hold	4A/G61/0.5	0.50	On Hold
4A/G53/0.25	0.25	Analysed	4A/G61/1.0	1.00	On Hold
4A/G53/0.5	0.50	On Hold	4A/G62/0.25	0.25	Analysed
4A/G53/1.0	1.00	On Hold	4A/G62/0.5	0.50	On Hold
4A/G54/0.25	0.25	On Hold	4A/G62/1.0	1.00	On Hold
4A/G54/0.5	0.50	On Hold	Total grid samples collected		188
4A/G54/1.0	1.00	On Hold	Total grid samples analysed		62
4A/G55/0.25	0.25	On Hold			
4A/G55/0.5	0.50	On Hold			
4A/G55/1.0	1.00	On Hold			
4A/G56/0.25	0.25	On Hold			
4A/G56/0.5	0.50	On Hold			
4A/G56/1.0	1.00	On Hold			
4A/G57/0.25	0.25	Analysed			
4A/G57/0.5	0.50	On Hold			

Notes: mBGS = metres below ground surface.
blue shading indicates sample collected in fill

Table 6
Soil Analytical Summary
Metals and pH
Sub-Area 4A ESA - Grid Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	pH	Metals																	
			pH	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (Total)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc
			pH Units	Sb (mg/kg)	As (mg/kg)	Ba (mg/kg)	Be (mg/kg)	B (mg/kg)	Cd (mg/kg)	Cr (mg/kg)	Co (mg/kg)	Cu (mg/kg)	Pb (mg/kg)	Mn (mg/kg)	Hg (mg/kg)	Mo (mg/kg)	Ni (mg/kg)	Se (mg/kg)	Sn (mg/kg)	V (mg/kg)	Zn (mg/kg)
NEPM 1999 Background Range			*	4-44^	1-50	100-3,000	*	*	1	5-1,000	1-40	2-100	2-200	850	0.03	*	5-500	*	1-25^	20-500	10-300
NEPM 1999 EIL			*	*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	1	*	60	*	*	50	200
NEPM 1999 HIL A			*	*	100	*	20	3,000	20	100 (CrVI) 12% (CrIII)	100	1,000	300	1,500	15	*	600	*	*	*	7,000
Laboratory Methodology (ALS)			E3600	EG005T											EG035T	EG005T					
4A/G1/0.25	0.25	10-Apr-08	8.4	<5	5	100	<1	<50	<1	25	9	16	10	180	<0.1	<2	20	<5	<5	32	27
4A/G1/0.5	0.50	10-Apr-08	8.5	<5	7	90	<1	<50	<1	28	12	21	14	326	<0.1	<2	28	<5	<5	36	46
4A/G1/1.0	1.00	10-Apr-08	-	<5	6	70	<1	<50	<1	25	9	14	15	258	<0.1	<2	20	<5	<5	33	50
4A/G4/0.25	0.25	10-Apr-08	6.6	<5	<5	70	<1	<50	<1	25	11	9	10	380	<0.1	<2	17	<5	<5	31	25
4A/G4/0.5	0.50	10-Apr-08	5.6	<5	7	70	1	<50	<1	43	10	20	12	161	<0.1	<2	29	<5	<5	46	33
4A/G9/0.25	0.25	9-Apr-08	7.9	<5	7	310	1	<50	<1	41	13	26	14	256	<0.1	<2	36	<5	<5	45	39
4A/G9/0.5	0.50	9-Apr-08	9.7	<5	6	200	<1	<50	<1	28	12	19	10	237	<0.1	<2	31	<5	<5	34	37
4A/G9/1.0	1.00	9-Apr-08	-	<5	6	80	<1	<50	<1	26	11	17	9	241	<0.1	<2	30	<5	<5	32	37
4A/G11/0.25	0.25	9-Apr-08	8.8	<5	6	140	<1	<50	<1	33	13	23	13	316	<0.1	<2	32	<5	<5	36	43
4A/G11/0.5	0.50	9-Apr-08	9.3	<5	6	100	<1	<50	<1	29	12	17	8	243	<0.1	<2	32	<5	<5	33	35
4A/G11/1.0	1.00	9-Apr-08	-	<5	6	60	<1	<50	<1	26	11	16	8	248	<0.1	<2	29	<5	<5	31	36
4A/G16/0.25	0.25	10-Apr-08	8.8	<5	6	160	<1	<50	<1	30	13	20	11	300	<0.1	<2	33	<5	<5	37	38
4A/G16/0.5	0.50	10-Apr-08	9.3	<5	6	100	<1	<50	<1	29	12	18	9	258	<0.1	<2	31	<5	<5	34	38
4A/G21/0.25	0.25	11-Apr-08	7.1	10	7	60	1	<50	<1	44	17	25	15	163	<0.1	<2	29	<5	<5	49	38
4A/G21/0.5	0.50	11-Apr-08	8.3	<5	5	120	<1	<50	<1	29	11	18	10	198	<0.1	<2	27	<5	<5	33	32
4A/G21/1.0	1.00	11-Apr-08	-	<5	6	170	<1	<50	<1	31	13	21	10	289	<0.1	<2	32	<5	<5	37	39
4A/G23/0.25	0.25	11-Apr-08	6	<5	<5	50	<1	<50	<1	27	8	12	11	250	<0.1	<2	16	<5	<5	34	29
4A/G23/0.5	0.50	11-Apr-08	7.9	<5	6	190	<1	<50	<1	35	13	22	11	225	<0.1	<2	29	<5	<5	40	34
4A/G26/0.25	0.25	15-Apr-08	9.6	<5	6	70	<1	<50	<1	35	13	20	16	432	<0.1	<2	26	<5	<5	40	45
4A/G26/0.5	0.50	15-Apr-08	-	<5	<5	70	<1	<50	<1	27	11	14	16	398	<0.1	<2	20	<5	<5	35	38
4A/G28/0.25	0.25	14-Apr-08	7.7	<5	<5	30	<1	<50	<1	28	7	10	8	158	<0.1	<2	18	<5	<5	33	28
4A/G28/0.5	0.50	14-Apr-08	8.3	<5	5	40	<1	<50	<1	42	20	19	10	182	<0.1	<2	29	<5	<5	43	31
4A/G28/1.0	1.00	14-Apr-08	-	<5	<5	120	<1	<50	<1	27	11	17	9	223	<0.1	<2	28	<5	<5	34	37
4A/G33/0.25	0.25	14-Apr-08	7.6	<5	5	80	<1	<50	<1	30	12	18	12	306	<0.1	<2	29	<5	<5	38	36
4A/G33/0.5	0.50	14-Apr-08	-	<5	<5	60	<1	<50	<1	29	10	11	12	396	<0.1	<2	17	<5	<5	36	31
4A/G40/0.25	0.25	8-Apr-08	7.7	<5	<5	60	<1	<50	<1	16	6	11	6	160	<0.1	<2	20	<5	<5	22	19
4A/G40/0.5	0.50	8-Apr-08	7.4	<5	<5	50	<1	<50	<1	27	8	11	10	217	<0.1	<2	16	<5	<5	33	27
4A/G40/1.0	1.00	8-Apr-08	-	<5	6	60	<1	<50	<1	30	13	18	11	186	<0.1	<2	23	<5	<5	37	31
4A/G41/0.1	0.10	8-Apr-08	8.2	<5	<5	60	<1	<50	<1	23	12	17	<5	259	<0.1	<2	58	<5	<5	16	28
4A/G49/0.25	0.25	8-Apr-08	6.1	<5	<5	40	<1	<50	<1	30	6	12	13	229	<0.1	<2	15	<5	<5	29	31
4A/G49/0.5	0.50	8-Apr-08	6.7	<5	6	50	1	<50	<1	35	12	21	12	136	<0.1	<2	24	<5	<5	39	31
4A/G50/0.25	0.25	7-Apr-08	6.5	<5	6	70	<1	<50	<1	37	8	15	11	151	<0.1	<2	25	<5	<5	42	30
4A/G50/0.5	0.50	7-Apr-08	6.4	<5	6	70	<1	<50	<1	36	13	22	11	150	<0.1	<2	26	<5	<5	41	30
4A/G50/1.0	1.00	7-Apr-08	7.5	<5	6	130	<1	<50	<1	28	11	18	10	239	<0.1	<2	25	<5	<5	34	32
4A/G59/0.25	0.25	11-Apr-08	6.2	<5	5	20	<1	<50	<1	34	6	12	8	90	<0.1	<2	22	<5	<5	36	26
4A/G59/0.5	0.50	11-Apr-08	8.1	12	6	540	<1	<50	<1	44	16	24	13	261	<0.1	<2	37	<5	<5	49	40
4A/G59/1.0	1.00	11-Apr-08	8.7	<5	6	80	<1	<50	<1	31	13	22	13	274	<0.1	<2	32	<5	<5	38	48

Notes: - mBGS = metres below ground surface.
- <## = analyte not detected at or above laboratory reporting limits.
- "-" = sample analysis not requested.
- "^" = ANZECC 1992 background range in the absence of a NEPM range.
- "*" = criteria or background range not specified.
- "#" = 4A/QS-3A, is a triplicate sample of 4A/G28/0.25 and was reported because it exceeded NEPM EIL criteria.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity,
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
Light shading indicates values above NEPM 1999 EIL
Dark Shading indicates levels outside of ANZECC 1992 environmental criteria
Blue shading indicates sample taken in area of un-natural fill material.

Table 7
Soil Analytical Summary
Polycyclic Aromatic Hydrocarbons and Total Petroleum Hydrocarbons
Sub-Area 4A ESA - Grid Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	PAH															TPH				
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Benzo(g,h,i) perylene	Chrysene	Dibenz(a,h) anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d) pyrene	Naphthalene	Phenanthrene	Pyrene	TPH C6-C9 Fraction	TPH C10-C14 Fraction	TPH C15-C28 Fraction	TPH C29-C36 Fraction	TPH C10-C36 (Sum of total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 1999 HIL A[1]			*	*	*	*	1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NSW EPA Criteria [2]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	65	1,000			
Laboratory Methodology (ALS)			EP075(SIM)B																EP080/071				
4A/G1/0.25	0.25	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G1/0.5	0.50	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G1/1.0	1.00	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G4/0.25	0.25	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G4/0.5	0.50	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G4/1.0	1.00	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G9/0.25	0.25	9-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G9/0.5	0.50	9-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G9/1.0	1.00	9-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G11/0.25	0.25	9-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G11/0.5	0.50	9-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G11/1.0	1.00	9-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G16/0.25	0.25	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G16/0.5	0.50	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G16/1.0	1.00	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G21/0.25	0.25	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G21/0.5	0.50	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G21/1.0	1.00	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G23/0.25	0.25	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G23/0.5	0.50	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G23/1.0	1.00	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G26/0.25	0.25	15-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G26/0.5	0.50	15-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G26/1.0	1.00	15-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G28/0.25	0.25	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G28/0.5	0.50	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G28/1.0	1.00	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G33/0.25	0.25	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G33/0.5	0.50	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G33/1.0	1.00	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G40/0.25	0.25	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G40/0.5	0.50	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G40/1.0	1.00	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G41/0.1	0.10	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-	-
4A/G49/0.25	0.25	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G49/0.5	0.50	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G49/1.0	1.00	8-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G50/0.25	0.25	7-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G50/0.5	0.50	7-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G50/1.0	1.00	7-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G59/0.25	0.25	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G59/0.5	0.50	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250
4A/G59/1.0	1.00	11-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250

Notes:

- mBGS = metres below ground surface
- <## = analyte not detected at or above the laboratory reporting limit.
"-" = not analysed.
- "*" = criteria not specified.

[1] NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

[2] New South Wales Environment Protection Authority (NSW EPA) threshold criteria for the assessment of service station sites. Levels at or below these thresholds indicate suitability for sensitive land use (NSW EPA, 1994).
Blue shading indicates sample taken in area of un-natural fill material.

Table 8
Soil Analytical Summary
Organochlorine and Organophosphate Pesticides (OCPs & OPPs)
Sub-Area 4A ESA - Grid Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	OCP																					OPP																					
			α-BHC	Aldrin	β-BHC	cis-Chlordane	δ-BHC	4,4 DDD	4,4-DDE	4,4 DDT	DDT+DDE+DDD	Dieldrin	Alpha-Endosulfan	Beta-Endosulfan	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	trans-chlordane	Azinophos methyl	Bromophos-Ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenamiphos	Fenthion	Malathion	Parathion Methyl	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
ANZECC 1992 Background			*	0.001-0.05	*	*	*	*	*	0.001-0.97	*	0.005-0.05	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[1]			*	*	*	*	*	*	*	*	200	*	*	*	*	*	*	*	*	*	10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)			EP068A																						EP068B																					
4A/G1/0.25	0.25	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G1/0.5	0.50	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G1/1.0	1.00	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G4/0.25	0.25	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G4/0.5	0.50	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G4/1.0	1.00	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G9/0.25	0.25	09-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G9/0.5	0.50	09-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G9/1.0	1.00	09-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/G11/0.25	0.25	09-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G11/0.5	0.50	09-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G11/1.0	1.00	09-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G16/0.25	0.25	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G16/0.5	0.50	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G16/1.0	1.00	10-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G21/0.25	0.25	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G21/0.5	0.50	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G21/1.0	1.00	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G23/0.25	0.25	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G23/0.5	0.50	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G23/1.0	1.00	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G26/0.25	0.25	15-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G26/0.5	0.50	15-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G26/1.0	1.00	15-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G28/0.25	0.25	14-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G28/0.5	0.50	14-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G28/1.0	1.00	14-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G33/0.25	0.25	14-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G33/0.5	0.50	14-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G33/1.0	1.00	14-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G40/0.25	0.25	08-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G49/0.25	0.25	08-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G49/0.5	0.50	08-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G49/1.0	1.00	08-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G50/0.5	0.50	07-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G50/1.0	1.00	07-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G50/0.25	0.25	07-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G59/0.25	0.25	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G59/0.5	0.50	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/G59/1.0	1.00	11-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05

Notes: - mBGS = metres below ground surface
- <## = analyte not detected at or above the laboratory reporting limit.
- "-" = sample analysis not requested.
- "*" = criteria or background range not specified.

1) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Table 9
Soil Analytical Summary
Asbestos
Sub-Area 4A ESA - Grid Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	Asbestos
NEPM 1999 EIL[1]			*
NEPM 1999 HIL A[2]			*
Laboratory Methodology (ASET)			NA
4A/G1/0.25	0.25	10-Apr-08	ND
4A/G2/0.25	0.25	10-Apr-08	ND
4A/G3/0.25	0.25	10-Apr-08	ND
4A/G4/0.25	0.25	10-Apr-08	ND
4A/G6/0.25	0.25	09-Apr-08	ND
4A/G7/0.25	0.25	09-Apr-08	ND
4A/G9/0.25	0.25	09-Apr-08	ND
4A/G10/0.25	0.25	09-Apr-08	ND
4A/G13/0.25	0.25	09-Apr-08	ND
4A/G16/0.25	0.25	10-Apr-08	ND
4A/G18/0.25	0.25	10-Apr-08	ND
4A/G19/0.25	0.25	11-Apr-08	ND
4A/G23/0.25	0.25	11-Apr-08	ND
4A/G26/0.25	0.25	15-Apr-08	ND
4A/G29/0.25	0.25	14-Apr-08	ND
4A/G31/0.25	0.25	14-Apr-08	ND
4A/G33/0.25	0.25	14-Apr-08	ND
4A/G36/0.25	0.25	14-Apr-08	ND
4A/G37/0.25	0.25	14-Apr-08	ND
4A/G40/0.25	0.25	08-Apr-08	ND
4A/G40/0.5	0.5	08-Apr-08	ND
4A/G40/1.0	1.0	08-Apr-08	ND
4A/G42/0.25	0.25	08-Apr-08	ND
4A/G44/0.25	0.25	08-Apr-08	ND
4A/G46/0.25	0.25	08-Apr-08	ND
4A/G49/0.25	0.25	08-Apr-08	ND
4A/G53/0.25	0.25	08-Apr-08	ND
4A/G57/0.25	0.25	15-Apr-08	ND
4A/G59/0.25	0.25	11-Apr-08	ND
4A/G62/0.25	0.25	11-Apr-08	ND

Notes:
mBGS = metres below ground surface
"*" = criterion not specified.
"ND" = not detected.
"NA" = not applicable
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Blue shading indicates sample taken in area of un-natural fill material.

Table 10
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Grid Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	Moisture	Inorganics		Metals											Phenolic Compounds (Halogenated)									
				Cyanide Total	Fluoride	Arsenic	Cadmium	Chromium (hexavalent)	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Zinc	2,3,5,6-tetrachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,6-dichlorophenol	2,3,4,5 & 2,3,4,6-tetrachlorophenol	2-chlorophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenols (Total Halogenated)
			%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 1999 Background Range			*	*	*	1-50	1	*	2-100	2-200	0.03	*	5-500	*	*	*	10-300	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	20	3	1	100	600	1	*	60	*	*	*	200	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			*	500 (Complex) 250 (Free)	*	100	20	100	1000	300	15	*	600	*	*	*	7000	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)			EA055	EK026G	EK040T	EG005T		EG048	EG005T		EG035T	EG005T						EP075A									
4A/G7/0.25	0.25	09-Apr-08	9.6	<1	270	7	<1	<0.5	22	13	<0.1	<2	30	<5	<2	<5	36	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.03	<0.03	<0.2	<0.03
4A/G14/0.1	0.10	10-Apr-08	24.1	<1	270	<5	<1	<0.5	13	8	<0.1	<2	16	<5	<2	<5	14	<0.03	<0.05	<0.05	<0.03	<0.03	<0.05	<0.03	<0.03	<0.2	<0.03

Notes: - mBGS = metres below ground surface
- <## indicates analyte not detected at or above laboratory reporting limits.
- "*" = criteria or background range not specified.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
Blue shading indicates sample taken in area of un-natural fill material.

Table 10 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Grid Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	Phenolic Compounds (Non-halogenated)											OCP																									
			2,4-dimethylphenol	2,4-dinitrophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-nitrophenol	Dinoseb	Phenol	Phenols (Total Non Halogenated)	4,4-DDE	α-BHC	Aldrin	β-BHC	cis-Chlordane	δ-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Trans-chlordane	Aldrin + Dieldrin	Chlordane	DDT+DDE+DDD
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 1999 Background Range			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			*	*	*	*	*	*	*	*	*	8500	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	10	*	*	*	*	10	50	200
Laboratory Methodology (ALS)			EP075A											EP075I																								EP075I		
4A/G7/0.25	0.25	09-Apr-08	<1	<5	<1	<1	<1	<5	<5	<5	<5	<1	<1	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.06	<0.03	<0.15
4A/G14/0.1	0.10	10-Apr-08	<1	<5	<1	<1	<1	<5	<5	<5	<5	<1	<1	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.05	<0.05	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.06	<0.03	<0.15

Notes: - mBGS = metres below ground surface
- <## indicates analyte not detected at or above laboratory reporting limits.
- "*" = criteria or background range not specified.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
Blue shading indicates sample taken in area of un-natural fill material.

Table 10 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Grid Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	PAH																TPH					MAH						
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	TPH C 6 - C 9 Fraction	TPH C10 - C14 Fraction	TPH C15 - C28 Fraction	TPH C29-C36 Fraction	TPH+C10 - C36 (Sum of total)	Benzene	Ethylbenzene	Styrene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 1999 Background Range			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			*	*	*	*	1	*	*	*	*	*	*	*	*	*	*	20	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)			EP075B																EP080/071					EP074A						
4A/G7/0.25	0.25	09-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1
4A/G14/0.1	0.10	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<1

Notes: - mBGS = metres below ground surface
- <## indicates analyte not detected at or above laboratory reporting limits.
- "*" = criteria or background range not specified.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
Blue shading indicates sample taken in area of un-natural fill material.

Table 10 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Grid Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	Volatile Halogenated Compounds																				PCB
			1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,2-dichloroethane	1,4-dichlorobenzene	Carbon tetrachloride	Chlorobenzene	Chloroform	cis-1,2-dichloroethene	Dichloromethane	Hexachlorobutadiene	TCE	Tetrachloroethene	trans-1,2-dichloroethene	Vinyl chloride	PCBs (Sum of total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
NEPM 1999 Background Range			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	10
Laboratory Methodology (ALS)			EP074I																			EP066
4A/G7/0.25	0.25	09-Apr-08	<0.01	<0.01	<0.02	<0.04	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1
4A/G14/0.1	0.10	10-Apr-08	<0.01	<0.01	<0.02	<0.04	<0.01	<0.01	<0.02	<0.02	<0.02	<0.01	<0.02	<0.02	<0.01	<0.4	<0.02	<0.02	<0.02	<0.02	<0.02	<0.1

Notes: - mBGS = metres below ground surface
- <## indicates analyte not detected at or above laboratory reporting limits.
- "*" = criteria or background range not specified.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
Blue shading indicates sample taken in area of un-natural fill material.

Table 11

Target Reference Table

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

Target Sample Identification	Sample Depth (mBGS)	Analytical Status
Pre April 2008		
4A/T5/0.25	0.25	Analysed
4A/T5/0.5	0.50	Analysed
4A/T5/1.0	1.00	Analysed
4A/T5/2.0	2.00	Analysed
Post April 2008		
4A/T1A/0.25	0.25	Analysed
4A/T1A/0.5	0.50	Analysed
4A/T1A/1.0	1.00	Analysed
4A/T1A/2.0	2.00	On Hold
4A/T1B/0.25	0.25	Analysed
4A/T1B/0.5	0.50	Analysed
4A/T1B/1.0	1.00	Analysed
4A/T1B/2.0	2.00	On Hold
4A/T2A/0.25	0.25	Analysed
4A/T2A/0.5	0.5	On Hold
4A/T2A/1.0	1.00	Analysed
4A/T2B/0.25	0.25	Analysed
4A/T2B/1.0	1.00	Analysed
4A/T2B/2.0	2.00	On Hold
4A/T3A/0.25	0.25	Analysed
4A/T3A/1.0	1.00	Analysed
4A/T3B/0.25	0.25	Analysed
4A/T3B/1.0	1.00	Analysed
4A/T3A/0.5	0.50	Analysed
4A/T3A/2.0	2.00	Analysed
4A/T3B/0.5	0.50	Analysed
4A/T3B/2.0	2.00	Analysed
Total target samples collected		**26**
Total target samples analysed		**22**

Notes :
mBGS - meters below ground surface.

Table 12
Soil Analytical Summary
Metals
Sub-Area 4A ESA - Target Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	Heavy Metals																	
			Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (Total)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range			4-44^	1-50	100-3000	*	*	1	5-1,000	1-40	2-100	2-200	850	0.03	*	5-500	*	1-25^	20-500	10-300
NEPM 1999 EIL[1]			*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	1	*	60	*	*	50	200
NEPM 1999 HIL A[2]			*	100	*	20	3000	20	100 (CrVI) 12% (CrIII)	100	1000	300	1500	15	*	600	*	*	*	7000
Laboratory Methodology (ALS)			EG005T											EG035T	EG005T					
Laboratory Methodology (Labmark)			3100											3400	3100					
Sampled Pre April 2008																				
4A/T5/0.25	0.25	17-Apr-08	<5	6	70	<1	<50	<1	27	11	16	16	328	<0.1	<2	24	<5	<5	33	54
4A/T5/1.0	1.00	17-Apr-08	<5	6	140	<1	<50	<1	27	10	14	8	211	<0.1	<2	29	<5	<5	32	37
Sampled Post April 2008																				
4A/T1A/0.25	0.25	16-Feb-09	<2	3.5	55	<2	<2	<2	28	11	9.2	11	350	0.02	<2	17	<2	<2	32	32
4A/T1A/1.0	1.00	16-Feb-09	<2	3.6	72	<2	<2	<2	26	8.4	10	6.2	140	0.02	<2	21	<2	<2	29	31
4A/T1B/0.25	0.25	13-Feb-09	<2	5.5	47	<2	3.2	<2	46	8.6	17	12	180	<0.01	<2	26	<2	<2	46	38
4A/T1B/0.5	0.50	13-Feb-09	<2	5.4	53	<2	2.2	<2	47	29	18	12	240	0.03	<2	28	<2	<2	39	34
4A/T1B/1.0	1.00	13-Feb-09	<2	5.1	57	<2	3.5	<2	29	12	16	11	270	0.01	<2	26	<2	<2	34	42
4A/T2A/0.25	0.25	16-Feb-09	<2	3	53	<2	3	<2	27	11	8.5	9.9	360	0.02	<2	15	<2	<2	29	31
4A/T2B/0.25	0.25	13-Feb-09	<2	5.8	67	<2	2.5	<2	44	13	20	13	220	0.02	<2	30	<2	<2	45	40
4A/T3A/1.0	1.00	16-Feb-09	<2	3.5	59	<2	<2	<2	23	9.1	8.9	5.8	170	0.01	<2	18	<2	<2	25	26
4A/T3B/1.0	1.00	13-Feb-09	<2	5	**430**	<2	3	<2	32	12	16	9.7	290	0.01	<2	28	<2	<2	34	58

Notes:

- "*" = criteria or background range not specified.
- "^" = ANZECC 1992 background range in the absence of a NEPM range.
- "-" = sample analysis not requested.
- < ## = analyte not detected at or above the laboratory reporting limit.
- NA = not applicable.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Light grey shading indicates concentrations above NEPM EILs.

Shading indicates value outside ANZECC 1992 background range

Table 13

Soil Analytical Summary

Total Petroleum Hydrocarbons (TPH)

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	TPH			
			C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs			*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*
NSW EPA Criteria (1)			65	1,000		
Laboratory Methodology (Labmark)			E029.2/E0 16.2	E006.2		
Laboratory Methodology (ALS)			EP080	EP071		
Sampled Post April 2008						
4A/T3A/1.0	1.00	16-Feb-09	-	<10	<20	<20
4A/T3B/1.0	1.00	13-Feb-09	-	<10	<20	<20

Notes: mBGS - meters below ground surface.

"< ## " = indicates analyte not detected at or above laboratory Limit of Reporting.

"-" = sample not analysed.

(1) New South Wales Environment Protection Authority (NSW EPA) threshold criteria for the assessment of service station sites. Levels at or below these thresholds indicate suitability for sensitive land use (NSW EPA, 1994).

"*" = criteria not specified.

Table 14

Soil Analytical Summary

Polycyclic Aromatic Hydrocarbons (PAHs)

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)															
			Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(b+k)Fluoranthene	Benzo(g,h,i)Perylene	Chrysene	DiBenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,-cd)Pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	1	*	*	*	*	*	*	*	*	*	*	20
Laboratory Methodology (Labmark)			E007.2															
Laboratory Methodology (ALS)			EP075(SIM)B															
Sampled Post April 2008																		
4A/T2A/0.25	0.25	16-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/T2B/0.25	0.25	13-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/T3A/1.0	1.00	16-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/T3B/1.0	1.00	13-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes: mBGS - meters below ground surface.
"-" = sample not analysed.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criterion not specified.

Table 15
Soil Analytical Summary
Phenols
Sub-Area 4A ESA - Target Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	PHENOLIC GROUPS																	
			Phenol	2-Chlorophenol	3 & 4 -Chlorophenol	2-Methylphenol	3-&4-methylphenol	2.4 & 2.5-Dichlorophenol	2,3- Dichlorophenol	2,6-dichlorophenol	3,4 Dichlorophenol	3,5-Dichlorophenol	4-Chloro-3-methylphenol	2,3,4-Trichlorophenol	2,3,6-Trichlorophenol	2,4,6-Trichlorophenol	2,3,5-Trichlorophenol	2,3,5,6-Tetrachlorophenol	2,3,4,6-tetrachlorophenol	Pentachloro-phenol
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			8500	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)			E008.2																	
Laboratory Methodology (ALS)			EP075																	
Sampled Post April 2008																				
4A/T2A/0.25	0.25	16-Feb-09	<0.5	<0.5	<1	<0.5	<1	<2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
4A/T2B/0.25	0.25	13-Feb-09	<0.5	<0.5	<1	<0.5	<1	<2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
4A/T3A/1.0	1.00	16-Feb-09	<0.5	<0.5	<1	<0.5	<1	<2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1
4A/T3B/1.0	1.00	13-Feb-09	<0.5	<0.5	<1	<0.5	<1	<2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1

Notes: mBGS - meters below ground surface.
"-" = sample not analysed.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criterion not specified.

Table 16
Soil Analytical Summary
Organochlorine Pesticides (OCPs)
Sub-Area 4A ESA - Target Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	ORGANOCHLORINE PESTICIDES (OCPs)																		ORGANOPHOSPHATE PESTICIDES (OPP)											
			4,4-DDD	4,4-DDE	4,4-DDT	α-BHC	Aldrin	β-BHC	cis-Chlordane	δ-BHC	Dieldrin	a-Endosulphan	b-Endosulphan	Endosulphansulphate	Endrin	Endrin Aldehyde	γ-BHC (Lindane)	Heptachlor	HeptachlorEpoxide	Hexachlorobenzene (HCB)	Methoxychlor	Chlordane (gamma)	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Ethion	Fenitrothion	Fenthion	Malathion	Methyl parathion	Parathion	Ronnel	Oxychlordane
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			200[3]	200[3]	200[3]	*	10[1]	*	50[2]	*	10[1]	*	*	*	*	*	*	10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)			E013.2																			E014.2										
Laboratory Methodology (ALS)			EP068A																			EP068										
Sampled Post April 2008																																
4A/T2A/0.25	0.25	16-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/T2B/0.25	0.25	13-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/T3A/1.0	1.00	16-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/T3B/1.0	1.00	13-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes: mBGS - meters below ground surface.
"-" = sample not analysed.
"< ## " = indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criterion not specified.
[1] This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.
[2] This criterion applies to the sum of the determined concentrations of Trans-Chlordane and Cis-Chlordane.
[3] This criterion applies to the sum of the determined concentrations of 4,4-DDD, 4,4-DDE and 4,4-DDT.

Table 17
Soil Analytical Summary
Phenoxy Herbicides, Phthalates and Polychorinated Biphenyls
Sub-Area 4A ESA - Target Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	PHENOXY HERBICIDES									PHTHALATES							POLYCHLORINATED BIPHENYLS (PCBs)					
			2,4,5-Trychlorophenoxy-acetic acid	2,4,5-(Silvex) Trichlorophenoxy-propanoic acid	2,4-Dichlorophenoxy-acetic acid	2,4-Dichlorophenoxy-butanoic acid	2,4-Dichlorophenoxy-propanoic acid	4-Chlorophenoxy acetic acid	Dicamba	MCPA	MCPB	Butyl benzyl phthalate	Bis(2-ethylhexyl) phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	Phthalates (sum)	PCB Aroclor 1016	Arochlor 1221	Aroclor 1232 and 1242 as total	Aroclor 1248 and 1254 as total	PCB Aroclor 1260	PCBs (Sum of total)
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	10
Laboratory Methodology (Labmark)			E017.2																E013.2						
Laboratory Methodology (ALS)			EP074																N/A						
Sampled Post April 2008																									
4A/T2A/0.25	0.25	16-Feb-09	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	-	-	-	-	-	-
4A/T2B/0.25	0.25	13-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<1	<1	<0.5	<1
4A/T3A/1.0	1.00	16-Feb-09	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	-	-	-	-	-	-
4A/T3B/1.0	1.00	13-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<1	<1	<0.5	<1

Notes: mBGS - meters below ground surface.
"-" = sample not analysed.
"< ## " = indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criterion not specified.

Table 18

Soil Analytical Summary

pH

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	pH
ANZECC 1992 Background			6-8
Laboratory Methodology (ALS)			EA002
Laboratory Methodology (Labmark)			E031.2
Sampled Pre April 2008			
4A/T5/0.25	0.25	17-Apr-08	8.7
4A/T5/1.0	1.00	17-Apr-08	8.4
Sampled Post April 2008			
4A/T1A/0.25	0.25	16-Feb-09	7.2
4A/T1A/0.5	0.50	16-Feb-09	5.6
4A/T1A/1.0	1.00	16-Feb-09	7.4
4A/T1B/0.25	0.25	13-Feb-09	6.4
4A/T1B/0.5	0.50	13-Feb-09	5.6
4A/T1B/1.0	1.00	13-Feb-09	8.9
4A/T2A/0.25	0.25	16-Feb-09	7.9
4A/T2A/1.0	1.00	16-Feb-09	7.5
4A/T2B/0.25	0.25	13-Feb-09	7.5
4A/T2B/1.0	1.00	13-Feb-09	9.0
4A/T3A/0.25	0.25	16-Feb-09	6.9
4A/T3A/1.0	1.00	16-Feb-09	6.4
4A/T3B/0.25	0.25	13-Feb-09	7.6
4A/T3B/1.0	1.00	13-Feb-09	8.2
4A/T3A/0.5	0.50	16-Feb-09	6.0
4A/T3A/2.0	2.00	16-Feb-09	8.7
4A/T3B/0.5	0.50	13-Feb-09	7.1
4A/T3B/2.0	2.00	13-Feb-09	9.3

Notes: mBGS - meters below ground surface.
Shading indicates concentrations outside the ANZECC 1992 Background range.

Table 19

Soil Analytical Summary

Ammonia, Nitrate & Nitrite

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	Ammonia	Nitrate	Nitrite	Nitrate + Nitrite
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs			*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*
Laboratory Methodology (ALS)			EK055	EK058	EK057	EK059
Laboratory Methodology (Labmark)			NA	E037.2/E051.2	E037.2/E051.2	E037.2/E051.2
Sampled Pre April 2008						
4A/T5/0.25	0.25	17-Apr-08	<20	1.1	0.3	1.3
4A/T5/0.5	0.50	17-Apr-08	<20	<0.1	0.2	0.2
4A/T5/1.0	1.00	17-Apr-08	<20	0.4	0.4	0.8
4A/T5/2.0	2.00	17-Apr-08	<20	0.14	0.165	0.302
Sampled Post April 2008						
4A/T1A/0.25	0.25	16-Feb-09	<2	2.7	-	-
4A/T1A/1.0	1.00	16-Feb-09	<2	<2	-	-
4A/T1B/0.25	0.25	13-Feb-09	<2	<2	-	-
4A/T1B/1.0	1.00	13-Feb-09	<2	<2	-	-
4A/T2A/0.25	0.25	16-Feb-09	<2	<2	-	-
4A/T2A/1.0	1.00	16-Feb-09	<2	<2	-	-
4A/T2B/0.25	0.25	13-Feb-09	<2	<2	-	-
4A/T2B/1.0	1.00	13-Feb-09	<2	<2	-	-
4A/T3A/0.25	0.25	16-Feb-09	<2	<2	-	-
4A/T3A/1.0	1.00	16-Feb-09	<2	<2	-	-
4A/T3B/0.25	0.25	13-Feb-09	<2	<2	-	-
4A/T3B/1.0	1.00	13-Feb-09	<2	<2	-	-

Notes: mBGS - meters below ground surface.
"<##" = indicates analyte not detected at or above laboratory reporting limit.
“-“ = sample not analysed.
“*“ = no criteria available.
"NA" = laboratory methodology not specified.

Table 20

Soil Analytical Summary

Asbestos

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	Asbestos
NEPM EILs			*
NEPM "A" HILs - Residential			*
Laboratory Methodology (ASET)			N/A
Sampled Pre April 2008			
4A/T5/0.25	0.25	17-Apr-08	ND
Sampled Post April 2008			
4A/T1A/0.25	0.25	16-Feb-09	ND
4A/T1B/0.25	0.25	13-Feb-09	ND
4A/T2A/0.25	0.25	16-Feb-09	ND
4A/T2B/0.25	0.25	13-Feb-09	ND
4A/T3A/0.25	0.25	16-Feb-09	ND
4A/T3B/0.25	0.25	13-Feb-09	ND

Notes: mBGS - meters below ground surface.
"N/A" = not available.
"ND" = no asbestos detected.
"*" = criterion not specified.

Table 21

Soil Analytical Summary

Fluoride and Total Cyanide

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	Fluoride	Total Cyanide
			(mg/kg)	(mg/kg)
NEPM "A" HILs - Residential			450[1]	500 (Complexed) 250 (Free)
Laboratory Methodology (Labmark)			E034.2	E040.2
Sampled Post April 2008				
4A/T1A/0.25	0.25	16-Feb-09	4.9	-
4A/T1A/1.0	1.00	16-Feb-09	2.9	-
4A/T1B/0.25	0.25	13-Feb-09	<2	-
4A/T1B/1.0	1.00	13-Feb-09	13	-
4A/T3A/1.0	1.00	16-Feb-09	<2	0.1
4A/T3B/1.0	1.00	13-Feb-09	6.4	0.1

Notes: mBGS - meters below ground surface.
"< ## " = indicates analyte not detected at or above laboratory reporting limit.
"-" = sample not analysed.
[1] Criteria sourced from The Victorian EPA Publication IWRG - Industrial Waste Guidelines, 2009 Fill Material Criteria.
"*" = criterion not specified.

Table 22

Soil Analytical Summary

E. Coli

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	E. Coli (MPN/g)
EPAV Biosolids Guidelines [1]			<100
NEPM EILs			*
NEPM "A" HILs - Residential			*
Laboratory Methodology (ALS)			MW004
Laboratory Methodology (EML)			3.3.4.22
Sampled Pre April 2008			
4A/T5/0.25	0.25	17-Apr-08	<2
4A/T5/0.5	0.50	17-Apr-08	<2
4A/T5/1.0	1.00	17-Apr-08	<2
4A/T5/2.0	2.00	17-Apr-08	<2
Sampled Post April 2008			
4A/T1A/0.25	0.25	16-Feb-09	<1
4A/T1A/1.0	1.00	16-Feb-09	<1
4A/T1B/0.25	0.25	13-Feb-09	<1
4A/T1B/1.0	1.00	13-Feb-09	<1
4A/T2A/0.25	0.25	16-Feb-09	<1
4A/T2A/1.0	1.00	16-Feb-09	<1
4A/T2B/0.25	0.25	13-Feb-09	<1
4A/T2B/1.0	1.00	13-Feb-09	<1
4A/T3A/0.25	0.25	16-Feb-09	<1
4A/T3A/1.0	1.00	16-Feb-09	<1
4A/T3B/0.25	0.25	13-Feb-09	<1
4A/T3B/1.0	1.00	13-Feb-09	<1

Notes:

mBGS - meters below ground surface.

"-" = sample not analysed.

All samples have been collected from natural soils.

"<##" = indicates analyte not detected at or above laboratory reporting limits.

[1] EPAV Publication 943 : Guidelines for Environmental Management of Biosolids - Land Application.

"*" = criteria not specified.

"MPN/g" = most probable number per gram.

Table 23
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Target Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	INORGANICS		HEAVY METALS																	BTEX				TPH			
			Cyanide Total	Fluoride	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Mercury	Nickel	Selenium	Tin	Vanadium	Zinc	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH C 6 - C 9 Fraction	TPH C10 - C14 Fraction	TPH C15 - C28 Fraction	TPH C29-C36 Fraction
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range			*	*	4-44^	1-50	100-3000	*	*	1	5-1000	1-40	2-100	2-200	850	*	0.03	5-500	*	1-25^	20-500	10-300	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	*	1	60	*	*	50	200	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			500 (complexed) 250 (free)	*	*	100	*	20	3000	20	12% (CrIII) 100 (CrVI)	100	1000	300	1500	*	15	600	*	*	*	7000	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)			E040.2	E034.2/E045.2	E022.2												E026.2	E022.2					E016.2				NA			
Laboratory Methodology (ALS)			EK026G	EK040T	EG005T												EG035T	EG005T					NA				EP080/071			
Sampled post April 2008																														
4A/T3A/0.25	0.25	16-Feb-09	0.5	<2	<2	3.3	53	<2	<2	<2	24	10	8.1	11	360	<2	0.02	15	<2	<2	27	29	<0.2	<1	<1	<3	<5	<10	21	23
4A/T3B/0.25	0.25	13-Feb-09	0.2	2	<2	5	65	<2	<2	<2	41	9	15	11	170	<2	0.02	25	<2	<2	36	33	<0.2	<1	<1	<3	<5	<10	25	<20

Notes: mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory reporting limit.
"*" = criteria or background range not specified.
"-" = sample not analysed.
"NA" = laboratory methodology not available.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.

Table 23 (cont.)

Soil Analytical Summary

EPA Screen

Sub-Area 4A ESA - Target Samples

Melbourne Water, Werribee, Victoria

PHENOLIC GROUPS

Sample Identification	Sample Depth (mBGS)	Sample Date	Phenol	2-Chlorophenol	3 & 4 -Chlorophenol	2-Methylphenol	3-&4-methylphenol	2,4 & 2,5-Dichlorophenol	2,3- Dichlorophenol	2,6-dichlorophenol	3,4 Dichlorophenol	3,5-Dichlorophenol	4-Chloro-3-methylphenol	2,3,4-Trichlorophenol	2,3,6-Trichlorophenol	2,4,6-Trichlorophenol	2,3,5-Trichlorophenol	2,3,5,6-Tetrachlorophenol	2,3,4,6-tetrachlorophenol	Pentachloro-phenol	Phenolics Total
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			8500	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)																					
Laboratory Methodology (ALS)																					
Sampled post April 2008																					
4A/T3A/0.25	0.25	16-Feb-09	<0.5	<0.5	<1	<0.5	<1	<2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<0.1
4A/T3B/0.25	0.25	13-Feb-09	<0.5	<0.5	<1	<0.5	<1	<2	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<0.1

ORGANOCHLORINE PESTICIDES (OCPs)

Sample Identification	4,4-DDD	4,4-DDE	4,4-DDT	α-BHC	Aldrin	β-BHC	cis-Chlordane	δ-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	γ-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Diazinon	Methyl parathion	Ronnel	Fenitrothion	Malathion	Chlorpyrifos	Fenthion	Parathion
	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]	*	*	*	*	*	*	*	*	10[(1)]	*	*	*	*	*	*	10	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)	E013.2																									
Laboratory Methodology (ALS)	EP075I																									
Sampled post April 2008																										
4A/T3A/0.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/T3B/0.25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes: mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criteria or background range not specified.
"-" = sample not analysed.
"NA" = laboratory methodology not available.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.

Table 23 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Target Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	POLYCHLORINATED BIPHENYLS (PCBs)						POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)																MONOCYCLIC AROMATIC HYDROCARBONS (MAHs)									CHLORINATED HYDROCARBONS			
			PCB Aroclor 1016	Arochlor 1221	Aroclor 1232 and 1242 as total	Aroclor 1248 and 1254 as total	PCB Aroclor 1260	PCBs (Sum of total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)	Styrene	Isopropylbenzene	n-Propylbenzene	1,3,5-Trimethylbenzene	sec-Butylbenzene	1,2,4-Trimethylbenzene	tert-Butylbenzene	p-Isopropyltoluene	n-Butylbenzene	Hexachloroethane	1,2,4-Trichlorobenzene	Hexachlorobutadiene	Hexachlorobenzene (HCB)
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			*	*	*	*	*	10	*	*	*	*	1	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)									E007.2															NA	NA								NA				
Laboratory Methodology (ALS)									EP075(SIM)B															NA	NA								NA				
			Sampled post April 2008																																			
4A/T3A/0.25	0.25	16-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5
4A/T3B/0.25	0.25	13-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.5

Notes: mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criteria or background range not specified.
"-" = sample not analysed.
"NA" = laboratory methodology not available.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.

Table 23 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Target Samples
Melbourne Water, Werribee, Victoria

VOLATILE ORGANIC COMPOUNDS (VOCs)

Sample Identification	Sample Depth (mBGS)	Sample Date	1,1,1,2-tetrachloroethane (mg/kg)	1,1,1-trichloroethane (mg/kg)	1,1,2,2-tetrachloroethane (mg/kg)	1,1,2-trichloroethane (mg/kg)	1,1-dichloroethane (mg/kg)	1,1-dichloroethene (mg/kg)	1,1-dichloropropene (mg/kg)	1,2,3-trichlorobenzene (mg/kg)	1,2,3-trichloropropane (mg/kg)	1,2-dibromo-3-chloropropane (mg/kg)	1,2-dibromoethane (mg/kg)	1,2-dichlorobenzene (mg/kg)	1,2-dichloroethane (mg/kg)	1,2-dichloropropane (mg/kg)	1,3-dichlorobenzene (mg/kg)	1,3-dichloropropane (mg/kg)	1,4-dichlorobenzene (mg/kg)	2,2-dichloropropane (mg/kg)	2-butanone (MEK) (mg/kg)	2-chlorotoluene (mg/kg)	4-chlorotoluene (mg/kg)	Bromobenzene (mg/kg)
NEPM 1999 Background Range			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)			E016.2												E016.2									
Laboratory Methodology (ALS)			NA												NA									
			Sampled post April 2008																					
4A/T3A/0.25	0.25	16-Feb-09	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1	<1
4A/T3B/0.25	0.25	13-Feb-09	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<1	<1	<1

Sample Identification	Sample Depth (mBGS)	Sample Date	Bromodichloromethane (mg/kg)	Bromochloromethane (mg/kg)	Bromoform mg/kg	Bromomethane mg/kg	Carbon tetrachloride mg/kg	Chlorobenzene (mg/kg)	Chlorodibromomethane (mg/kg)	Chloroethane (mg/kg)	Chloroform (mg/kg)	Chloromethane (mg/kg)	cis-1,2-dichloroethene (mg/kg)	cis-1,3-dichloropropene (mg/kg)	4-methyl-2-pentanone (MIBK) (mg/kg)	Dichloromethane (mg/kg)	Dibromomethane (mg/kg)	Dichlorodifluoromethane (mg/kg)	Tetrachloroethene (mg/kg)	trans-1,2-dichloroethene (mg/kg)	trans-1,3-dichloropropene (mg/kg)	Trichlorofluoromethane (mg/kg)	Vinyl chloride (mg/kg)
NEPM 1999 Background Range			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4A/T3A/0.25	0.25	16-Feb-09	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<5	<1	<1	<1	<1	<1	<1	<1
4A/T3B/0.25	0.25	13-Feb-09	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<5	<1	<1	<1	<1	<1	<1	<1

Notes: mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criteria or background range not specified.
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.
"NA" = laboratory methodology not available.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Table 23 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Target Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	SEMI-VOLATILE ORGANIC COMPOUNDS (sVOC)																							
			2,4,5-Trychlorophenoxy-acetic acid	2,4,5-(Silvex) Trichlorophenoxy-propanoic acid	2,4-Dichlorophenoxy-acetic acid	2,4-Dichlorophenoxy-butanoic acid	2,4-Dichlorophenoxy-propanoic acid	4-Chlorophenoxy acetic acid	Butyl benzyl phthalate	Bis(2-ethylhexyl) phthalate	Dicamba	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	MCPA	MCPB	phthalates (sum)	Naphthalene	Pentachloroethane	TCE	Chlordane (gamma)	Chlorpyrifos-methyl	Ethion	Oxychlordane
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)																										
Laboratory Methodology (ALS)																										
			Sampled post April 2008																							
4A/T3A/0.25	0.25	16-Feb-09	-	-	-	-	-	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	<3	<1	<1	<1	<0.5	<0.5	<0.5	<0.5
4A/T3B/0.25	0.25	13-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<1	<1	<1	<0.5	<0.5	<0.5	<0.5

Notes: mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criteria or background range not specified.
"-" = sample not analysed.
"NA" = laboratory methodology not available.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.

Table 24

Validation Reference Table

Sub-Area 4A ESA - Validation Samples

Melbourne Water, Werribee, Victoria

Validation Sample Identification	Sample Depth (mBGS)	Infrastructure Removal Validated	Analytical Status
Sampled Post April 2008			
4A/T5/VS-1	1.2	Septic	Analysed
4A/T5/VS-2	1.3	Septic	Analysed
4A/T5/VS-3	0.9	Septic	Analysed
4A/T5/VS-4	1.5	Septic	Analysed
4A/T5/VS-5	3.3	Septic	Analysed
4A/VS-1	0.1	Soak pit	Analysed
4A/VS-2	0.1	Soak pit	Analysed
4A/VS-3	0.1	Concrete slab	Analysed
4A/VS-4	0.1	Concrete Slab	Analysed
4A/VS-6	0.7	Underground asbestos pipe	Analysed
4A/VS-7	0.7	Underground asbestos pipe	Analysed
Count of samples collected			**11**
Count of sampled analysed			**11**

Notes :
mBGS - meters below ground surface.

Table 25

Soil Analytical Summary

Heavy Metals

Sub-Area 4A ESA - Validation Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Validation Type	Sample Date	METALS												
				Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (III+VI) (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Nickel (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Mercury (mg/kg)
NEPM Background ranges				1-50	100-3,000	*	1	5-1,000	1-40	2-100	2-200	850	5-500	20-500	10-300	0.03
NEPM EILs				20	300	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	60	50	200	1
NEPM "A" HILs - Residential				100	*	20	20	100 (CrVI) 12% (CrIII)	100	1,000	300	1500	600	*	7,000	15
Laboratory Methodology (Labmark)																E026.2
Laboratory Methodology (ALS)																EG035T
4A/T5/VS-1	1.2	Septic	27-Jul-09	8	60	<1	<1	38	15	22	13	313	41	41	51	0.1
4A/T5/VS-2	1.3	Septic	27-Jul-09	6	70	<1	<1	32	12	18	10	258	35	35	44	<0.1
4A/T5/VS-3	0.9	Septic	27-Jul-09	5	90	<1	<1	28	12	17	13	264	29	35	35	0.2
4A/T5/VS-4	1.5	Septic	27-Jul-09	6	70	<1	<1	36	13	19	12	236	35	39	43	<0.1
4A/T5/VS-5	3.3	Septic	27-Jul-09	6	90	1	<1	30	12	15	13	206	29	41	22	<0.1
4A/VS-1	0.1	Soak pit	29-Jul-09	7	70	1	<1	34	19	17	15	280	45	45	24	<0.1
4A/VS-2	0.1	Soak pit	29-Jul-09	6	1,530	1	<1	32	13	17	12	212	43	42	23	<0.1
4A/VS-3	0.1	Concrete slab	29-Jul-09	<5	50	<1	<1	26	11	8	11	387	17	32	29	<0.1
4A/VS-4	0.1	Concrete slab	29-Jul-09	<5	50	<1	<1	26	10	8	11	373	16	31	29	<0.1

Notes: mBGS - meters below ground surface.

"*" = criterion not specified.

"< ## " = indicates analyte not detected at or above laboratory reporting limit.

"^" = ANZECC 1992 background range in the absence of a NEPM range.

Light grey shading indicates concentrations above NEPM EILs.

Table 26

Soil Analytical Summary

Total Petroleum Hydrocarbons (TPH)

Sub-Area 4A ESA - Validation Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Validation Type	Sample Date	TPH				
				C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Total TPH (C_{10} - C_{36})
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs				*	*	*	*	*
NEPM "A" HILs - Residential				*	*	*	*	*
NSW EPA Criteria [1]				65	1,000			
Laboratory Methodology (Labmark)				E029.2/E016.2	E006.2			
Laboratory Methodology (ALS)				EP080	EP071			
4A/T5/VS-1	1.2	Septic	27-Jul-09	<10	<50	<100	<100	<250
4A/T5/VS-5	3.3	Septic	27-Jul-09	<10	<50	<100	<100	<250
4A/VS-1	0.1	Soak pit	29-Jul-09	<10	<50	<100	<100	<250
4A/VS-2	0.1	Soak pit	29-Jul-09	<10	<50	<100	<100	<250

Notes: mBGS - meters below ground surface.

"< ## " = indicates analyte not detected at or above laboratory Limit of Reporting.

"*" = criteria not specified.

[1] New South Wales Environment Protection Authority (NSW EPA) threshold criteria for the assessment of service station sites. Levels at or below these thresholds indicate suitability for sensitive land use (NSW EPA, 1994).

Table 27

Soil Analytical Summary

Polycyclic Aromatic Hydrocarbons (PAHs)

Sub-Area 4A ESA - Validation Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Validation type	Sample Date	POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)																	
				Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)Anthracene	Benzo(a)Pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)Perylene	Benzo(k)fluoranthene	Chrysene	DiBenzo(a,h)Anthracene	Fluoranthene	Fluorene	Indeno(1,2,3,-cd)Pyrene	Naphthalene	Phenanthrene	Pyrene	PAH EPA448
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential				*	*	*	*	1	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (Labmark)				E007.2																
Laboratory Methodology (ALS)				EP075(SIM)B																
4A/T5/VS-4	1.5	Septic	27-Jul-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<8
4A/T5/VS-5	3.3	Septic	27-Jul-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<8

Notes: mBGS - meters below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criterion not specified.

Table 28
Soil Analytical Summary
Organochlorine Pesticides (OCPs)
Sub-Area 4A ESA - Validation Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Validation Type	Sample Date	ORGANOCHLORINE PESTICIDES (OCPs)																							
				4,4-DDD	4,4-DDE	4,4-DDT	DDT+DDE+DDD	α-BHC	Aldrin	Aldrin + Dieldrin	β-BHC	cis-Chlordane	δ-BHC	Dieldrin	Endosulphan I	Endosulphan II	Endosulphansulphate	Endrin	Endrin Aldehyde	Endrin ketone	γ-BHC (Lindane)	Heptachlor	HeptachlorEpoxide	Hexachlorobenzene (HCB)	Methoxychlor	trans-Chlordane
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential				200[3]	200[3]	200[3]	200[3]	*	10[1]	10[1]	*	50[2]	*	10[1]	*	*	*	*	*	*	*	10	*	*	*	50[2]
Laboratory Methodology (Labmark)				E013.2																							
Laboratory Methodology (ALS)				EP068A																							
4A/T5/VS-1	1.2	Septic	27-Jul-09	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
4A/T5/VS-5	3.3	Septic	27-Jul-09	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
4A/VS-1	0.1	Soak pit	29-Jul-09	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
4A/VS-2	0.1	Soak pit	29-Jul-09	<0.05	<0.05	<0.2	<0.3	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05

Notes: mBGS - meters below ground surface.
"< ## " = indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criterion not specified.
(1) This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.
(2) This criterion applies to the sum of the determined concentrations of Trans-Chlordane and Cis-Chlordane.
(3) This criterion applies to the sum of the determined concentrations of 4,4-DDD, 4,4-DDE and 4,4-DDT.

Table 29

Soil Analytical Summary

pH

Sub-Area 4A ESA - Validation Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Validation Type	Sample Date	pH
ANZECC 1992 Background				6-8
Laboratory Methodology (ALS)				EA002
Laboratory Methodology (Labmark)				E031.2
4A/T5/VS-3	0.9	Septic	27-Jul-09	8.5
4A/T5/VS-5	3.3	Septic	27-Jul-09	9.1
4A/VS-3	0.1	Concrete slab	29-Jul-09	6.8
4A/VS-4	0.1	Concrete slab	29-Jul-09	7.6

Notes: mBGS - meters below ground surface.

Shading indicates concentrations outside the ANZECC 1992 Background range.

Table 30

Soil Analytical Summary

Asbestos

Sub-Area 4A ESA - Validation Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Validation Type	Sample Date	Asbestos
NEPM EILs				*
NEPM "A" HILs - Residential				*
Laboratory Methodology (ASET)				N/A
4A/T5/VS-3	0.9	Septic	27-Jul-09	ND
4A/T5/VS-5	3.3	Septic	27-Jul-09	ND
4A/VS-6	0.7	Underground asbestos pipe	12-Oct-10	ND
4A/VS-7	0.7	Underground asbestos pipe	13-Oct-10	ND

Notes: mBGS - meters below ground surface.
"N/A" = not available.
"ND" = no asbestos detected.
"*" = criterion not specified.

Table 31

Soil Analytical Summary

Ammonia, Nitrate & Nitrite

Sub-Area 4A ESA - Validation Samples

Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Validation Type	Sample Date	Ammonia (mg/kg)	Nitrate (mg/kg)	Nitrite (mg/kg)	Nitrate + Nitrite (mg/kg)
NEPM EILs				*	*	*	*
NEPM "A" HILs - Residential				*	*	*	*
Laboratory Methodology (ALS)				EK055	EK058	EK057	EK059
Laboratory Methodology (Labmark)				NA	E037.2/E051.2	E037.2/E051.2	E037.2/E051.2
4A/T5/VS-2	1.3	Septic	27-Jul-09	-	0.206	<0.1	0.206
4A/T5/VS-3	0.9	Septic	27-Jul-09	<20	-	-	-
4A/T5/VS-5	3.3	Septic	27-Jul-09	<20	<0.1	<0.1	<0.1
4A/VS-3	0.1	Concrete slab	29-Jul-09	-	0.736	0.338	1.07
4A/VS-4	0.1	Concrete slab	29-Jul-09	-	0.465	0.66	1.12

Notes: mBGS - meters below ground surface.
"<##" = indicates analyte not detected at or above laboratory Limit of Reporting.
“-“ = sample not analysed.
“*“ = no criteria available.
"NA" = laboratory methodology not specified.

Table 32
Soil Analytical Summary
E. Coli, Coliforms, and Sulphate
Sub-Area 4A ESA - Validation Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Validation Type	Sample Date	E. Coli (MPN/g)	Coliform (MPN/g)	Sulphate (mg/kg)
NEPM EILs				*	*	2000
NEPM "A" HILs - Residential				*	*	*
EPAV Biosolids Guidelines (1)				<100	*	*
Laboratory Methodology (ALS)				MW004	NA	
Laboratory Methodology (EML)				3.3.4.22	NA	
4A/T5/VS-2	1.3	Septic	27-Jul-09	<3	<3	-
4A/T5/VS-5	3.3	Septic	27-Jul-09	<3	<3	-
4A/VS-1	0.1	Soak pit	29-Jul-09	<3	-	-
4A/VS-2	0.1	Soak pit	29-Jul-09	<3	-	-
4A/VS-3	0.1	Concrete slab	29-Jul-09	<3	<3	50
4A/VS-4	0.1	Concrete slab	29-Jul-09	<3	<3	100

Notes:

mBGS - meters below ground surface.
"-" = sample not analysed.
All samples have been collected from natural soils.
"<##" = indicates analyte not detected at or above laboratory reporting limits.

(1) EPAV Publication 943 : Guidelines for Environmental Management of Biosolids - Land Application.

"*" = criteria not specified.

"MPN/g" = most probable number per gram.
"NA" = Laboratory methodology not specified.

Table 33

Well Installation Reference Table

Sub-Area 4A ESA - Well Installation

Melbourne Water, Werribee, Victoria

Soil Bore Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Analytical Status
Sampled Post April 2008			
4A/B-8/0.25	MW-7	0.25	Analysed
4A/B-8/0.5	MW-7	0.5	Analysed
4A/B-8/1.0	MW-7	1.0	Analysed
4A/B-8/2.0	MW-7	2.0	Analysed
4A/B-8/3.0	MW-7	3.0	Analysed
4A/B-8/4.0	MW-7	4.0	Analysed
4A/B-8/5.0	MW-7	5.0	Analysed
4A/B-8/6.0	MW-7	6.0	Analysed
4A/B-8/7.0	MW-7	7.0	Analysed
4A/B-8/8.0	MW-7	8.0	Analysed
4A/B-8/9.0	MW-7	9.0	Analysed
4A/B-8/10.0	MW-7	10.0	Analysed
4A/B-8/11.0	MW-7	11.0	On Hold
4A/B-8/12	MW-7	12.0	Analysed
4A/B-8/13	MW-7	13.0	On Hold
4A/B-8/14	MW-7	14.0	On Hold
4A/B-8/15	MW-7	15.0	On Hold
4A/B-8/16	MW-7	16.0	On Hold
MW-8/1.0	MW-8	1.0	On Hold
MW-8/2.0	MW-8	2.0	Analysed
MW-8/3.0	MW-8	3.0	Analysed
MW-8/4.0	MW-8	4.0	On Hold
MW-8/5.0	MW-8	5.0	Analysed
MW-8/6.0	MW-8	6.0	On Hold
MW-8/7.0	MW-8	7.0	On Hold
MW-8/8.0	MW-8	8.0	Analysed
		Count of samples collected	**26**
		Count of sampled analysed	**17**

Notes :

mBGS - meters below ground surface.

All samples taken from natural soils

Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK

Table 34
Soil Analytical Summary
Metals
Sub-Area 4A ESA - Well Installation
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well	Sample Depth (mBGS)	Sample Date	Heavy Metals																	
				Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range				4-44^	1-50	100-3000	*	*	1	5-1,000	1-40	2-100	2-200	850	0.03	*	5-500	*	1-25^	20-500	10-300
NEPM 1999 EIL[1]				*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	1	*	60	*	*	50	200
NEPM 1999 HIL A[2]				*	100	*	20	3000	20	100 (CrVI) 12% (CrIII)	100	1000	300	1500	15	*	600	*	*	*	7000
Laboratory Methodology (ALS)				EG005T							EG005T				EG035T	EG005T					
Laboratory Methodology (LABMARK)				3100							3100				3400	3100					
4A/B-8/0.5	MW-7	0.5	09-Feb-09	<2	5.4	86	<2	8	<2	37	14	18	11	310	0.02	<2	33	<2	<2	32	43
4A/B-8/1.0	MW-7	1.0	09-Feb-09	<2	5.8	41	<2	9.5	<2	37	14	19	11	320	0.01	<2	32	<2	<2	29	45
4A/B-8/2.0	MW-7	2.0	09-Feb-09	<2	4.9	75	<2	8.2	<2	35	11	18	13	240	0.02	<2	26	<2	<2	28	40
4A/B-8/3.0	MW-7	3.0	09-Feb-09	<2	4.7	59	<2	7.8	<2	33	20	19	14	750	0.02	<2	52	<2	<2	34	31
4A/B-8/4.0	MW-7	4.0	09-Feb-09	<2	6.8	33	<2	13	<2	38	18	19	14	310	0.01	<2	44	<2	<2	37	32
4A/B-8/5.0	MW-7	5.0	09-Feb-09	<2	5	120	<2	12	<2	40	12	19	12	220	0.03	<2	28	<2	<2	35	34
4A/B-8/6.0	MW-7	6.0	09-Feb-09	<2	6.3	26	<2	11	<2	29	17	19	16	630	0.01	<2	32	<2	<2	31	39
4A/B-8/7.0	MW-7	7.0	09-Feb-09	<2	<2	20	<2	9.3	<2	22	21	12	8.3	620	<0.01	<2	37	<2	<2	19	14
4A/B-8/8.0	MW-7	8.0	09-Feb-09	<2	3.4	50	<2	8.1	<2	29	20	15	10	820	<0.01	<2	38	<2	<2	31	23
4A/B-8/9.0	MW-7	9.0	09-Feb-09	<2	3.5	280	<2	8.7	<2	71	32	16	8.5	640	<0.01	<2	57	<2	<2	51	29
4A/B-8/10.0	MW-7	10.0	09-Feb-09	<2	<2	100	<2	9.1	<2	56	46	24	2.9	900	<0.01	<2	150	<2	<2	23	57
4A/B-8/12	MW-7	12.0	09-Feb-09	<2	<2	18	<2	6.2	<2	28	28	21	<2	550	<0.01	<2	130	<2	<2	<2	51
MW-8/2.0	MW-8	2.0	26-Oct-09	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-
MW-8/3.0	MW-8	3.0	26-Oct-09	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-
MW-8/5.0	MW-8	5.0	26-Oct-09	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-
MW-8/8.0	MW-8	8.0	26-Oct-09	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-

Notes: - mBGS = metres below ground surface.
- "^" = ANZECC 1992 background range in the absence of a NEPM range.
- "*" = criteria or background range not specified.
- "-" = sample analysis not requested.
- < ## = analyte not detected at or above the laboratory reporting limit.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Light grey shading indicates concentrations above NEPM EILs.

All samples taken from natural soils

Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK

Table 35

Soil Analytical Summary

Total Petroleum Hydrocarbons (TPH) and BTEX

Sub-Area 4A ESA - Well Installation

Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well	Sample Depth (mBGS)	Sample Date	TPH - Semivolatile Fraction					BTEX					
				C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	C_{10} - C_{36} (Sum of total)	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*	*	*	*	*
NSW EPA Criteria[3]				65	1,000				*	*	*	*	*	*
Laboratory Methodology (ALS)				EP080/071					EP080					
4A/B-8/0.5	MW-7	0.5	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/1.0	MW-7	1.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/2.0	MW-7	2.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/3.0	MW-7	3.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/4.0	MW-7	4.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/5.0	MW-7	5.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/6.0	MW-7	6.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/7.0	MW-7	7.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/8.0	MW-7	8.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
4A/B-8/9.0	MW-7	9.0	09-Feb-09	<5	<10	<20	<20	<50	-	-	-	-	-	-
MW-8/2.0	MW-8	2.0	26-Oct-09	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.5	<1
MW-8/3.0	MW-8	3.0	26-Oct-09	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.5	<1
MW-8/5.0	MW-8	5.0	26-Oct-09	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.5	<1
MW-8/8.0	MW-8	8.0	26-Oct-09	<10	<50	<100	<100	<250	<0.2	<0.5	<0.5	<0.5	<0.5	<1

Notes: - mBGS = metres below ground surface.
- "*" = criteria or background range not specified.
- "-" = sample analysis not requested.
- < ## = analyte not detected at or above the laboratory reporting limit.

[1] NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

[2] NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

[3] New South Wales Environment Protection Authority (NSW EPA) threshold criteria for the assessment of service station sites. Levels at or below these thresholds indicate suitability for sensitive land use (NSW EPA, 1994).

Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK

All samples taken from natural soils

Table 36
Soil Analytical Summary
Polycyclic Aromatic Hydrocarbons (PAHs)
Sub-Area 4A ESA - Well Installation
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well	Sample Depth (mBGS)	Sample Date	PAH															
				Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAH (Sum of Total)
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	1	*	*	*	*	*	*	*	*	*	*	20
Laboratory Methodology (ALS)				EP075(SIM)B															
Laboratory Methodology (LABMARK)				2800															
4A/B-8/0.5	MW-7	0.5	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/1.0	MW-7	1.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/2.0	MW-7	2.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/3.0	MW-7	3.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/4.0	MW-7	4.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/5.0	MW-7	5.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/6.0	MW-7	6.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/7.0	MW-7	7.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/8.0	MW-7	7.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/9.0	MW-7	7.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
MW-8/2.0	MW-8	7.0	26-Oct-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
MW-8/3.0	MW-8	7.0	26-Oct-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
MW-8/5.0	MW-8	7.0	26-Oct-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
MW-8/8.0	MW-8	7.0	26-Oct-09	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-

Notes: - mBGS = metres below ground surface.
- "*" = criteria or background range not specified.
- "-" = sample analysis not requested.
- < ## = analyte not detected at or above the laboratory reporting limit.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK

All samples taken from natural soils

Table 37

Soil Analytical Summary

Phenols

Sub-Area 4A ESA - Well Installation

Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well	Sample Depth (mBGS)	Sample Date	Phenols																	
				2,4,6-trichlorophenol	2,6-dichlorophenol	2,3- Dichlorophenol	2,3,4,6-tetrachlorophenol	2,3,4-Trichlorophenol	2,3,5,6-Tetrachlorophenol	2,3,5-Trichlorophenol	2,3,6-Trichlorophenol	2,4 & 2,5-Dichlorophenol	3 & 4 -Chlorophenol	3,4 Dichlorophenol	3,5-Dichlorophenol	2-chlorophenol	2-methylphenol	3-&4-methylphenol	4-chloro-3-methylphenol	Phenol	Pentachlorophenol
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	8500	*
Laboratory Methodology (ALS)				EP075(SIM)B																	
Laboratory Methodology (LABMARK)				2100																	
4A/B-8/0.5	MW-7	0.5	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/1.0	MW-7	1.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/2.0	MW-7	2.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/3.0	MW-7	3.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/4.0	MW-7	4.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/5.0	MW-7	5.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/6.0	MW-7	6.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/7.0	MW-7	7.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/8.0	MW-7	8.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1
4A/B-8/9.0	MW-7	9.0	09-Feb-09	<0.5	<0.5	<1	<1	<0.5	<1	<0.5	<0.5	<2	<1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1

Notes: - mBGS = metres below ground surface.

- "*" = criteria or background range not specified.
- < ## = analyte not detected at or above the laboratory reporting limit.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK

All samples taken from natural soils

Table 38
Soil Analytical Summary
Organochlorine Pesticides (OCPs)
Sub-Area 4A ESA - Well Installation
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well	Sample Depth (mBGS)	Sample Date	ORGANOCHLORINE PESTICIDES (OCPs)																				
				4,4-DDD	4,4-DDE	4,4-DDT	α-BHC	Aldrin	β-BHC	cis-Chlordane	δ-BHC	Dieldrin	Endosulphan I	Endosulphan II	Endosulphansulphate	Endrin	Endrin Aldehyde	γ-BHC (Lindane)	Heptachlor	HeptachlorEpoxide	Hexachlorobenzene (HCB)	Methoxychlor	trans-Chlordane
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				200(3)	200(3)	200(3)	*	10(1)	*	50(2)	*	10(1)	*	*	*	*	*	*	10	*	*	*	50(2)
Laboratory Methodology (ALS)				E013.2																				
Laboratory Methodology (LABMARK)				EP068A																				
4A/B-8/0.5	MW-7	0.5	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/1.0	MW-7	1.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/2.0	MW-7	2.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/3.0	MW-7	3.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/4.0	MW-7	4.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/5.0	MW-7	5.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/6.0	MW-7	6.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/7.0	MW-7	7.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/8.0	MW-7	8.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/9.0	MW-7	9.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes: mBGS - meters below ground surface.

"< ## " = indicates analyte not detected at or above laboratory Limit of Reporting.

"*" = criterion not specified.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

(1) This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.

(2) This criterion applies to the sum of the determined concentrations of Trans-Chlordane and Cis-Chlordane.

(3) This criterion applies to the sum of the determined concentrations of 4,4-DDD, 4,4-DDE and 4,4-DDT.

Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK

All samples taken from natural soils

Table 39
Soil Analytical Summary
Organophosphate Pesticides (OPP)
Sub-Area 4A ESA - Well Installation
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well	Sample Depth (mBGS)	Sample Date	ORGANOPHOSPHATE PESTICIDES									
				Chlorpyrifos	Diazinon	Chlorpyrifos-methyl	Ethion	Fenitrothion	Fenthion	Malathion	Methyl parathion	Parathion	Ronnel
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)				E014.2									
Laboratory Methodology (LABMARK)				EP068									
4A/B-8/0.5	MW-7	0.5	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/1.0	MW-7	1.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/2.0	MW-7	2.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/3.0	MW-7	3.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/4.0	MW-7	4.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/5.0	MW-7	5.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/6.0	MW-7	6.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/7.0	MW-7	7.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/8.0	MW-7	8.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/9.0	MW-7	9.0	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes: mBGS - meters below ground surface.

"< ## " = indicates analyte not detected at or above laboratory Limit of Reporting.

"*" = criterion not specified.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

All samples taken from natural soils

Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK

Table 40

Soil Analytical Summary

Polychlorinated Biphenyls (PCB), Phthaltes & Phenoxy Herbicides

Sub-Area 4A ESA - Well Installation

Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well	Sample Depth (mBGS)	Sample Date	POLYCHLORINATED BIPHENYLS (PCB)						PHTHALATES							PHENOXY HERBICIDES										
				Arochlor 1016	Arochlor 1221	Arochlor 1260	Aroclor 1232 and 1242 as total	Aroclor 1248 and 1254 as total	PCBs (Sum of total)	Bis(2-ethylhexyl) phthalate	Butyl benzyl phthalate	Diethylphthalate	Dimethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	phthalates (Sum of total)	2,4,5-Trichlorophenoxy Acetic Acid	2,4,5-TP (Silvex)	Hedonal	2,4-dichlorophenoxybutanoic acid	2,4-Dichlorprop	2,4,6-Trichlorophenoxy-acetic acid	2-Chlorophenoxyacetic acid	4-Chlorophenoxy acetic acid	Dicamba	2-Methyl-4-chlorophenoxyacetic acid	2-Methyl-4-Chlorophenoxy Butanoic Acid
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	**10**	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)				2600						2880							2920										
Laboratory Methodology (LABMARK)				EG035T						NA							NA										
4A/B-8/0.5	MW-7	0.5	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/1.0	MW-7	1.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/2.0	MW-7	2.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/3.0	MW-7	3.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/4.0	MW-7	4.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/5.0	MW-7	5.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/6.0	MW-7	6.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/7.0	MW-7	7.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/8.0	MW-7	8.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4A/B-8/9.0	MW-7	9.0	09-Feb-09	<0.5	<0.5	<0.5	<1	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes: mBGS - meters below ground surface.

"< ## " = indicates analyte not detected at or above laboratory reporting limits.

"*" = criterion not specified.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK

All samples taken from natural soils

Table 41
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Well Installation
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well	Sample Depth (mBGS)	Sample Date	INORGANICS		METALS											PHENOLIC GROUPS																
				Cyanide Total	Fluoride	Arsenic	Cadmium	Chromium	Chromium (VI)	Copper	Lead	Molybdenum	Mercury	Nickel	Selenium	Tin	Zinc	2,3- Dichlorophenol	2,3,4,6-tetrachlorophenol	2,3,4-Trichlorophenol	2,3,5,6-Tetrachlorophenol	2,3,5-Trichlorophenol	2,3,6-Trichlorophenol	2,4,6-trichlorophenol	2,6-dichlorophenol	2,4 & 2,5-Dichlorophenol	2-chlorophenol	2-methylphenol	3 & 4 -Chlorophenol	3-&4-methylphenol	3,4 Dichlorophenol	3,5-Dichlorophenol	4-chloro-3-methylphenol	Pentachlorophenol
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range				*	*	1-50	1	5-1000	*	2-100	2-200	*	0.03	5-500	*	1-25^	10-300	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	20	3	1 (CrVI) 400 (CrIII)	1	100	600	*	1	60	*	*	200	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				500 (complexed) 250 (free)	*	100	20	12% (CrIII) 100 (CrVI)	100	1000	300	*	15	600	*	*	7000	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	8500
Laboratory Methodology (LABMARK)				E040.2	E034.2/E045.2	3100			4230	3100			3400	3100				2200															
4A/B-8/0.25	MW-7	0.25	09-Feb-09	140	0.2	5.5	<2	50	<1	20	13	<2	0.04	32	<2	<2	42	<1	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	<1	<1	<0.5	<0.5	<0.5	<1

Notes: mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criteria or background range not specified.
"NA" = laboratory methodology not available.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.
Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK
All samples taken from natural soils.
Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK
"^" = ANZECC 1992 background range in the absence of a NEPM range.

Table 41 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Well Installation
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Sample Date	ORGANOCHLORINE PESTICIDES (OCPs)																					POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)															
				Phenol	4,4-DDE	4,4-DDT	a-BHC	Aldrin	b-BHC	cis-Chlordane	d-BHC	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Oxychlordane	trans-chlordane	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	10	*	*	*	*	*	*	*	*	1	*	*	*	*	*	*	*	*	*	*	20
Laboratory Methodology (LABMARK)				E013.2																					E007.2													
4A/B-8/0.25	MW-7	0.25	09-Feb-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Notes: mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criteria or background range not specified.
"NA" = laboratory methodology not available.

1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.
Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK
All samples taken from natural soils.
Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK
"^" = ANZECC 1992 background range in the absence of a NEPM range.

Table 41 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Well Installation
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Sample Date	BTEX: Benzene (mg/kg)	BTEX: Toluene (mg/kg)	BTEX: Ethylbenzene (mg/kg)	BTEX: m- & p-xylene (mg/kg)	BTEX: o-xylene (mg/kg)	TPH: TPH C 6 - C 9 Fraction (mg/kg)	TPH: TPH C10 - C14 Fraction (mg/kg)	TPH: TPH C15 - C28 Fraction (mg/kg)	TPH: TPH C29-C36 Fraction (mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*	*	*
Laboratory Methodology (LABMARK)				E016.2					NA			
4A/B-8/0.25	MW-7	0.25	09-Feb-09	<0.2	<1	<1	<2	<1	<5	<10	<20	<20

Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Sample Date	MAHs: Styrene (mg/kg)	MAHs: Isopropylbenzene (mg/kg)	MAHs: n-Propylbenzene (mg/kg)	MAHs: 1,3,5-Trimethylbenzene (mg/kg)	MAHs: sec-Butylbenzene (mg/kg)	MAHs: 1,2,4-Trimethylbenzene (mg/kg)	MAHs: tert-Butylbenzene (mg/kg)	MAHs: p-Isopropyltoluene (mg/kg)	MAHs: n-Butylbenzene (mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*	*	*
Laboratory Methodology (LABMARK)				NA								
4A/B-8/0.25	MW-7	0.25	09-Feb-09	<0.5	<0.5	<1	<1	<1	<1	<1	<1	<1

Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Sample Date	Chlorinated Hydrocarbons: Hexachloroethane (mg/kg)	Chlorinated Hydrocarbons: 1,2,4-Trichlorobenzene (mg/kg)	Chlorinated Hydrocarbons: Dichloromethane (mg/kg)	Chlorinated Hydrocarbons: Hexachlorobutadiene (mg/kg)	Chlorinated Hydrocarbons: Bromochloromethane (mg/kg)	Chlorinated Hydrocarbons: Pentachloroethane (mg/kg)	Chlorinated Hydrocarbons: Hexachlorobenzene (HCB) (mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*
Laboratory Methodology (LABMARK)				NA						
4A/B-8/0.25	MW-7	0.25	09-Feb-09	<1	<1	<5	<1	<1	<1	<0.5

Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Sample Date	VOCs: 1,1,1,2-tetrachloroethane (mg/kg)	VOCs: 1,1,1-trichloroethane (mg/kg)	VOCs: 1,1,2,2-tetrachloroethane (mg/kg)	VOCs: 1,1,2-trichloroethane (mg/kg)	VOCs: 1,1-dichloroethane (mg/kg)	VOCs: 1,1-dichloroethene (mg/kg)	VOCs: 1,1-dichloropropene (mg/kg)	VOCs: 1,2,3-trichlorobenzene (mg/kg)	VOCs: 1,2,3-trichloropropane (mg/kg)	VOCs: 1,2-dibromo-3-chloropropane (mg/kg)	VOCs: 1,2-dibromoethane (mg/kg)	VOCs: 1,2-dichlorobenzene (mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (LABMARK)				E016.2											
4A/B-8/0.25	MW-7	0.25	09-Feb-09	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1

Notes:

mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criteria or background range not specified.
"NA" = laboratory methodology not available.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.
Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK
All samples taken from natural soils.
Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK
"^" = ANZECC 1992 background range in the absence of a NEPM range.

Table 41 (cont.)
Soil Analytical Summary
EPA Screen
Sub-Area 4A ESA - Well Installation
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Sample Date	VOLATILE ORGANIC COMPOUNDS (VOCs)																																POLYCHLORINATED BIPHENYLS (PCBs)					
				1,2-dichloroethane	1,2-dichloropropane	1,3-dichlorobenzene	1,3-dichloropropane	1,4-dichlorobenzene	2,2-dichloropropane	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichlorodifluoromethane	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride	Methyl Ethyl Ketone	4-Methyl-2-pentanone	Arochlor 1016	Arochlor 1221	Arochlor 1260	Aroclor 1232 and 1242 as total	Aroclor 1248 and 1254 as total	PCBs (Sum of total)
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	mg/kg	mg/kg	mg/kg	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM 1999 Background Range				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 EIL[1]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM 1999 HIL A[2]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	10
Laboratory Methodology (LABMARK)				E016.2																																E013.2					
4A/B-8/0.25	MW-7	0.25	09-Feb-09	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<0.5	<0.5	<0.5	<1	<1	<1

Notes: mBGS = metres below ground surface.
"< ## " indicates analyte not detected at or above laboratory Limit of Reporting.
"*" = criteria or background range not specified.
"NA" = laboratory methodology not available.
1) NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
2) NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.
Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK
All samples taken from natural soils.
Samples highlighted yellow were taken from MW-7 and have been incorrectly labelled due to an oversight by OTEK
"^" = ANZECC 1992 background range in the absence of a NEPM range.

Table 42
Water Analytical Summary
Dissolved Metals
Sub-Area 4A ESA - Groundwater Samples
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Standing Water Level (SWL) (metres)	Groundwater Elevation (mAHD)	Sample Date	Heavy Metals																	
					Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Boron (µg/L)	Cadmium (µg/L)	Chromium (III+VI) (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Manganese (µg/L)	Mercury (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Tin (µg/L)	Vanadium (µg/L)	Zinc (µg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																						
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values					*	24^	*	*	370	0.2	^^	*	1.4	3.4	1900	0.6	*	11	11	^^^	*	8
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters																						
Livestock Watering					*	500	*	100	5000	10	1000	1000	500	100	*	2	10	1000	20	*	100	20000
Recreational Water (Raw Water x1)					*	50	1,000	*	1,000	5	50	*	1,000	50	100	1	*	100	10	*	*	5,000
Recreational Water (Raw Water x20)[b]					*	1000	20000	*	20000	100	1000	*	20000	1000	2000	20	*	2000	200	*	*	100000
Laboratory Methodology (ALS)					EG020F									EG020F		EG035F	EG020F					
4A	MW-7	10.986	8.842	26-Nov-09	<1	3	80	<1	260	<0.1	<1	2	3	<1	9	<0.1	<1	31	10	<1	<10	18
4A	MW-8	9.509	8.669	25-Nov-09	<1	1	339	<1	430	<0.1	<1	6	4	<1	743	<0.1	6	27	<10	<1	<10	9
4A	MW-7	9.998	9.830	07-Dec-11	<1	2	72	<1	290	<0.1	<1	1	4	<1	16	<0.1	<1	12	10	<1	<10	20
4A	MW-8	8.551	9.627	07-Dec-11	<1	<1	42	<1	450	<0.1	3	<1	5	<1	9	<0.1	<1	7	10	<1	<10	19

Notes:

"*" = criteria not specified.
< ## = analyte not detected at or above the laboratory reporting limit.
"*<#" denotes laboratory reporting limit increased due to matrix interference. Where reporting limit is typically 2-5 × Method Detection Limit.
"^" denotes criterion for arsenic (III). No criterion for total arsenic available.
"^^" denotes no criterion for total chromium available.
"^^^" denotes no criterion for total tin available.
"[b]" = "higher concentrations of toxicants may be tolerated occasionally if it is assumed that a person will ingest a maximum of 100 ml water during a normal swimming session compared with 2L/d for potable water." (ANZECC 1992).
Light shading indicates samples exceeding the ANZECC 2000 aquatic ecosystem (slightly - moderately) disturbed system trigger value.
Orange shading indicates samples exceesing the ANZECC 1992 Recreational Water (Raw Water x1) guidelines

Table 43
Water Analytical Summary
BTEX & Total Petroleum Hydrocarbons (TPH)
Sub-Area 4A ESA - Groundwater Samples
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Standing Water Level (SWL) (metres)	Groundwater Elevation (mAHD)	Sample Date	BTEX						TPH				
					Benzene	Ethyl-benzene	Toluene	meta & para Xylenes	Ortho Xylenes	Xylene Total	C_6 - C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	C_{10} - C_{36} (Sum of total)
					(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality															
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values					950	*	*	200	350	*	*	*	*	*	*
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters															
Livestock Watering					*	*	*	*	*	*	*	*	*	*	200#
Recreational Water					10.000	*	*	*	*	*	*	*	*	*	200#
Laboratory Methodology (ALS)					EP080						EP071/080				EP080/071
4A	MW-7	10.986	8.842	26-Nov-09	<1	<2	<2	<2	<2	<4	<20	<50	<100	<50	<200
4A	MW-8	9.509	8.669	25-Nov-09	<1	<2	<2	<2	<2	<4	<20	<50	300	<50	300
4A	MW-7	9.998	9.830	07-Dec-11	<1	<2	<2	<2	<2	<2	<20	<50	<100	<50	<220
4A	MW-8	8.551	9.627	07-Dec-11	<1	<2	<2	<2	<2	<2	<20	<50	<100	<50	<220

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.
- "#" denotes criterion for total extractable organics based on aesthetic considerations.

Table 44
Water Analytical Summary
Polycyclic Aromatic Hydrocarbons (PAH) & Phenolic Compounds
Sub-Area 4A ESA - Groundwater Samples
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Standing Water Level (SWL) (metres)	Groundwater Elevation (mAHD)	Sample Date	PAH															Phenolics											
					Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,6-dichlorophenol	2-chlorophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
					(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																															
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values					*	*	*	*	*	*	*	*	*	*	*	*	16	*	*	*	20	160	*	*	490	*	*	*	*	10	320
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters																															
Livestock Watering					*	*	*	*	**0.01**	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Recreational Water					*	*	*	*	0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)					EP075(SIM)B															EP075 (SIM) A											
4A	MW-7	10.986	8.842	26-Nov-09	<1	<1	<1	<1	<0.5**	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<2	<1
4A	MW-8	9.509	8.669	25-Nov-09	<1	<1	<1	<1	<0.5**	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.
- "-" = sample analysis not requested.
"**" Laboratory reporting limit was increased due to matrix interference.

Table 45
Water Analytical Summary
Volatile Organic Compounds (VOC)
Sub-Area 4A ESA - Groundwater Samples
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Sample Date	Monocyclic Aromatic Hydrocarbons									Oxygenated Compounds				Carbon disulfide	Fumigants					Halogenated Aliphatic Compounds											
			1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	2-butanone (MEK)	2-hexanone (MBK)	4-methyl-2-pentanone (MIBK)	Vinyl acetate		1,2-dibromoethane	1,2-dichloropropane	2,2-dichloropropane	cis-1,3-dichloropropene	trans-1,3-dichloropropene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,3-dichloropropane	Bromomethane
			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	mg/L	(µg/L)	(µg/L)	(µg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																																	
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	6500	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)			EP074A									EP074B				EP074C	EP074D					EP074E											
4A	MW-8	25-Nov-09	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.

Table 45 (cont.)
Water Analytical Summary
Volatile Organic Compounds (VOC)
Sub-Area 4A ESA - Groundwater Samples
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Standing Water Level (SWL) (metres)	Groundwater Elevation (mAHD)	Sample Date	Halogenated Aliphatic Compounds																Halogenated Aromatic Compounds									Trihalomethanes			
					Carbon tetrachloride	Chloroethane	Chloromethane	cis-1,2-dichloroethene	cis-1,4-Dichloro-2-butene	Dibromomethane	Dichlorodifluoromethane	Hexachlorobutadiene	Iodomethane	Pentachloroethane	Trichloroethylene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,4-Dichloro-2-butene	Trichlorofluoromethane	Vinyl chloride	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Bromodichloromethane	Bromoform	Chlorodibromomethane	Chloroform
					(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
					ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																														
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values					*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	10	170	160	260	60	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)					EP074E																EP074F									EP074G			
4A	MW-8	9.509	8.669	25-Nov-09	<5	<50	<50	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<5	<50	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.

Table 46
Water Analytical Summary
Hydrochemistry
Sub-Area 4A ESA - Groundwater Samples
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Standing Water Level (SWL) (metres)	Groundwater Elevation (mAHD)	Sample Date	Alkalinity (Hydroxide) as CaCO3 (mg/L)	Alkalinity (total) as CaCO3 (mg/L)	Anions Total (meq/L)	Bicarbonate (mg/L)	Calcium (mg/L)	Carbonate (mg/L)	Cations Total (meq/L)	Chloride (mg/L)	Electrical Conductivity (µs/cm)	Ionic Balance (%)	Magnesium (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Nitrate + Nitrite as N (mg/L)	pH (field) (pH Units)	Potassium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																							
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values					*	*	*	*	*	*	*	0.003	*	*	*	0.7	*	*	*	*	*	*	*
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters																							
Livestock Watering					*	*	*	*	1000	*	*	*	*	*	*	30	10	*	*	*	*	*	*
Recreational Water (Raw Water x1)					*	*	*	*	*	*	*	400	*	*	*	10	1	*	*	*	300	400	*
Recreational Water (Raw Water x20)[b]					*	*	*	*	*	*	*	8,000	*	*	*	200	20	*	*	*	6,000	8,000	*
Laboratory Methodology (ALS)					ED037P		EN055	ED037P	ED093F	ED037P	EN055	ED045	EA010	EN055	ED093F	EK058G	EK057	EK059G	EA005	ED093F		ED040	EA015
4A	MW-7	10.986	8.842	26-Nov-09	<1	438	102	438	299	<1	104	2980	11200	0.69	431	2.69	<0.01	2.69	7.17	26	1210	458	6910
4A	MW-8	9.509	8.669	25-Nov-09	<1	360	73.8	360	180	<1	68.3	2100	7750	3.87	177	1.31	0.08	1.4	7.44	24	1010	354	4660
4A	MW-7	9.998	9.830	07-Dec-11	<1	358	122	358	371	<1	111	3,770	11900	4.78	445	2.32	<0.01	2.32	7.43	26.0	1260	395	7100
4A	MW-8	8.551	9.627	07-Dec-11	<1	320	102	320	232	<1	91.2	3,110	8930	5.39	192	4.21	<0.01	4.21	7.27	28.0	1450	356	5500

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.
- "b" = "higher concentrations of toxicants may be tolerated occasionally if it is assumed that a person will ingest a maximum of 100 ml water during a normal swimming session compared with 2L/d for potable water." (ANZECC 1992).
Grey shading indicates samples exceeding the ANZECC 200 aquatic ecosystem (slightly-moderately) disturbed system trigger
Underline indicates samples exceeding the ANZECC 2000 aquatic ecosystem (slightly - moderately) disturbed system trigger value.
Orange shading indicates samples exceesing the ANZECC 1992 Recreational Water (Raw Water x1) guidelines

Table 47
Water Analytical Summary
Dissolved Metals - QA/QC
Sub-Area 4A ESA - Groundwater Samples
Melbourne Water, Werribee, Victoria

Sample Identification		Laboratory	Sample Date	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Hexavalent Chromium	Cobalt	Copper	Lead	Ferrous Iron	Manganese	Mercury	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc
Sub Area	**Well ID**			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																								
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values				*	24^	*	*	370	0.2	^^	1	*	1.4	3.4	*	1900	0.6	*	11	11	*	^^^	*	8
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters																								
Livestock Watering				*	500	*	100	5000	10	1000	*	1000	500	100	*	*	2	10	1000	20	*	*	100	20000
Recreational Water (Raw Water x1)				*	50	1,000	*	1,000	5	50	*	*	1,000	50	*	100	1	*	100	10	*	*	*	5,000
Recreational Water (Raw Water x20)[b]				*	1000	20000	*	20000	100	1000	*	*	20000	1000	*	2000	20	*	2000	200	*	*	*	100000
4A	MW-8	ALS	25-Nov-09	<1	1	339	<1	430	<0.1	<1	-	6	4	<1	-	743	<0.1	6	27	<10	-	<1	<10	9
4A	QS-1			<1	1	371	<1	430	<0.1	<1	-	5	4	<1	-	742	<0.1	6	28	10	-	<1	<10	10
Relative Percentage Difference (RPD)				**<50%**	**0%**	**9%**	**<50%**	**0%**	**<50%**	**<50%**	**-**	**18%**	**0%**	**<50%**	**-**	**0%**	**<50%**	**0%**	**4%**	**<50%**	**-**	**<50%**	**<50%**	**11%**
4A	QS-1A	Labmark		<5	10	370	<5	460	<5	27	-	5.7	<5	<5	<0.1	750	<0.1	6.3	31	42##	<5	<5	<5	11
Relative Percentage Difference (RPD)				**<50%**	**>100%**	**9%**	**<50%**	**7%**	**<50%**	**>186%**	**-**	**5%**	**<50%**	**<50%**	**-**	**1%**	**<50%**	**5%**	**14%**	**>123%**	**-**	**<50%**	**<50%**	**20%**
4B	QW_1_081211	ALS	08-Dec-11	<1	<1	123	<1	150	0.1	<1	<10	1	6	1	-	20	<0.1	<1	98	10	-	<1	<10	101
4B	MW-09			<1	1.0	128	<1	150	<0.1	<1	<10	2	6	1	-	21	<0.1	<1	100	10	-	<1	<10	100
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**4%**	**<50%**	**0%**	**<50%**	**<50%**	**<50%**	**67%**	**0%**	**0%**	**-**	**5%**	**<50%**	**<50%**	**2%**	**0%**	**-**	**<50%**	**<50%**	**1%**
4B	QW_1A_081211	GROUNDSWELL		<10	<10	110	-	100	<1	<10	9	<10	10	<10	-	20	<0.1	-	-	<10	-	<10	<10	100
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**11%**	**-**	**40%**	**<50%**	**<50%**	**<50%**	**<50%**	**50%**	**<50%**	**-**	**0%**	**<50%**	**-**	**-**	**<50%**	**-**	**<50%**	**<50%**	**1%**

Notes: < ## = analyte not detected at or above the laboratory reporting limit.
"*<#" denotes laboratory reporting limit increased due to matrix interference. Where reporting limit is typically 2-5 × Method Detection Limit.
"-" = sample analysis not requested.
"*" = criteria not specified.
"^" denotes criterion for arsenic (III). No criterion for total arsenic available.
"^^" denotes no criterion for total chromium available.
"^^^" denotes no criterion for total tin available.
"##" results for QS-1A, exceeded both ANZECC 2000 and ANZECC 1992 (Livestock Watering and Recreational Water) guidelines, with the higher criteria being highlighted.
"[b]" = "higher concentrations of
Light shading indicates samples exceeding the ANZECC 2000 aquatic ecosystem (slightly - moderately) disturbed system trigger value.
Dark grey shading indicates RPDs above 50%.

Table 48
Water Analytical Summary
BTEX and Total Petroleum Hydrocarbons (TPH)
Sub-Area 4A ESA - Groundwater QA/QC
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Laboratory	Sample Date	BTEX						TPH				
				Benzene	Ethyl-benzene	Toluene	meta & para Xylenes	Ortho Xylenes	Total Xylene	C_6 - C_9	C_{10} - C_{14}	C_{15} - C_{28}	C_{29}-C_{36}	C_{10} - C_{36} (Sum of total)
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values				950	*	*	200	350	*	*	*	*	*	*
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters														
Livestock Watering				*	*	*	*	*	*	*	*	*	*	200#
Recreational Water				10	*	*	*	*	*	*	*	*	*	200#
Laboratory Methodology (Labmark)				E029.1/E016.1						E0.29.1	E004.1			
Laboratory Methodology (ALS)				EP080						EP080/071				
4A	MW-8	ALS	25-Nov-09	<1	<2	<2	<2	<2	<4	<20	<50	300	<50	300
4A	QS-1			<1	<2	<2	<2	<2	<4	<20	<50	260	<50	260
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**14%**	**<50%**	**14%**
4A	QS-1A	LABMARK		<0.5	<1	<1	<2	<1	<3	<20	<40	299	<100	299
Relative Percentage Difference (RPD)				**<50**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**0%**	**<50%**	**0%**
4B	QW_1_081211	ALS	08-Dec-11	<1	<2	<2	<2	<2	<2	<20	<50	<100	<50	<50
4B	MW-09			<1	<2	<2	<2	<2	<2	<20	<50	<100	<50	<50
Relative Percentage Difference (RPD)				**<50**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
4B	QW_1A_081211	GROUNDSWELL		<1	<2	<2	<2	<2	<2	<20	<100	<200	<100	-
Relative Percentage Difference (RPD)				**<50**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.
- "#" denotes criterion for total extractable organics based on aesthetic considerations.

Table 49
Water Analytical Summary
Polycyclic Aromatic Hydrocarbons (PAH) & Phenolic Compounds
Sub-Area 4A ESA - Groundwater QA/QC
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Laboratory	Sample Date	PAH															Phenolics												
				Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k&k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	2,3,4,6-tetrachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,6-dichlorophenol	2-chlorophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																															
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values				*	*	*	*	*	*	*	*	*	*	*	*	16	*	*	*	*	20	160	*	*	490	*	*	*	*	10	320
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters																															
Livestock Watering				*	*	*	*	0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Recreational Water				*	*	*	*	0.01	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Laboratory Methodology (ALS)				EP075(SIM)B															EP075 (SIM) A												
Laboratory Methodology (Labmark)				E007.1															NA												
4A	MW-8	ALS	25-Nov-09	<1	<1	<1	<1	<0.5	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<2	<1
4A	QS-1			<1	<1	<1	<1	<0.5	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<2	<1
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
4A	QS-1A	Labmark		<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	-	-	-	<10	<10	<10	-	<10	<10	<30	<10
Relative Percentage Difference (RPD)				**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**-**	**<50**	**-**	**-**	**-**	**<50**	**<50**	**<50**	**-**	**<50**	**<50**	**<50**	**<50**
4B	QW_1_081211	ALS	08-Dec-11	<1	<1	<1	<1	<0.5	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4B	MW-09			<1	<1	<1	<1	<0.5	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
4B	QW_1A_081211	GROUNDSWELL		<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<1	<1	<1	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Relative Percentage Difference (RPD)				**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**<50**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.
- "-" = sample analysis not requested.
- NA = not applicable.

Table 50
Water Analytical Summary
Volatile Organic Compounds (VOC)
Sub-Area 4A ESA - Groundwater QA/QC
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Laboratory	Sample Date	Chlorinated Hydrocarbons																												Halogenated Hydrocarbons							
				1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,2,3-trichlorobenzene	1,2,3-trichloropropane	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,2-dichloroethane	1,3-dichlorobenzene	1,4-dichlorobenzene	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dichloromethane	Hexachlorobutadiene	Hexachloroethane	Trichloroethylene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2-dibromoethane	Bromodichloromethane	Bromoform	Chlorodibromomethane	Dibromomethane	Iodomethane	Trichlorofluoromethane
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																																							
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger				*	*	*	6500	*	*	10	*	170	*	160	260	60	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4A	MW-8	ALS	25-Nov-09	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	-	<5	-	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<50
4A	QS-1			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<5	<5	<5	-	<5	-	<5	<5	<5	<5	<50	<5	<5	<5	<5	<5	<5	<50
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
4A	QS-1A	LABMARK		<5	<5	<5	<5	<30	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.
- "-" = sample analysis not requested.

Table 50 (cont.)
Water Analytical Summary
Volatile Organic Compounds (VOC)
Sub-Area 4A ESA - Groundwater QA/QC
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Laboratory	Sample Date	VOC																																	
				1,1-dichloropropene	1,2,4-trimethylbenzene	1,2-dibromo-3-chloropropane	1,2-dichloropropane	1,3,5-trimethylbenzene	1,3-dichloropropane	2,2-dichloropropane	2-butanone (MEK)	2-chlorotoluene	2-hexanone (MBK)	4-chlorotoluene	4-methyl-2-pentanone (MIBK)	Bromobenzene	Bromochloromethane	Bromomethane	Carbon disulfide	Chloromethane	cis-1,4-Dichloro-2-butene	Dichlorodifluoromethane	Isopropylbenzene	n-butylbenzene	n-propylbenzene	Pentachloroethane	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	trans-1,4-Dichloro-2-butene	Vinyl acetate
				(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																																					
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
4A	MW-8	ALS	25-Nov-09	<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<50	<5	-	<50	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50
4A	QS-1			<5	<5	<5	<5	<5	<5	<5	<50	<5	<50	<5	<50	<5	-	<50	<5	<50	<5	<50	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
4A	QS-1A	LABMARK		<5	<5	<5	<5	<5	<5	<30	<50	<5	-	<5	<50	<5	<5	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	-
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**-**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**-**

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.
- "-" = sample analysis not requested.

Table 51
Water Analytical Summary
Hydrochemistry
Sub-Area 4A ESA - Groundwater QA/QC
Melbourne Water, Werribee, Victoria

Sub Area	Well ID	Laboratory	Sample Date	Alkalinity (Hydroxide) as CaCO3 (mg/L)	Alkalinity (total) as CaCO3 (mg/L)	Anions Total (meq/L)	Bicarbonate (mg/L)	Bromide (mg/L)	Calcium (mg/L)	Carbonate (mg/L)	Cations Total (meq/L)	Chloride (mg/L)	Electrical Conductivity (µs/cm)	Fluoride (mg/L)	Ionic Balance (%)	Iron (mg/L)	Magnesium (mg/L)	Nitrate as N (mg/L)	Nitrite as N (mg/L)	Nitrate + Nitrite as N (mg/L)	Orthophosphate (mg/L)	pH (pH Units)	Potassium (mg/L)	Sodium (mg/L)	Sulphate (mg/L)	Total Dissolved Solids (mg/L)
ANZECC/ARMCANZ 2000 - Australian and New Zealand Guidelines for Fresh and Marine Water Quality																										
Aquatic Ecosystems Slightly - Moderately Disturbed System Trigger Values				*	*	*	*	*	*	*	*	0.003	*	*	*	*	*	0.7	*	*	*	*	*	*	*	*
ANZECC 1992 - Australian Water Quality Guidelines for Fresh and Marine Waters																										
Livestock Watering				*	*	*	*	*	1000	*	*	*	*	*	*	*	*	30	10	*	*	*	*	*	*	*
Recreational Water (Raw Water x1)				*	*	*	*	*	*	*	*	400	*	*	*	*	*	10	1	*	*	*	*	300	400	*
Recreational Water (Raw Water x20)[b]				*	*	*	*	*	*	*	*	8,000	*	*	*	*	*	200	20	*	*	*	*	6,000	8,000	*
Laboratory Methodology (Labmark)				4550	4550	*	4550	4300	3200	4550	*	4300	4010	4300	*	3200	3200	4300	4300	*	4300	4000	3200	3200	4300	4110
Laboratory Methodology (ALS)				ED037P		EN055	ED037P	*	ED093F	ED037P	EN056	ED045	EA010	*	EN057	*	ED093F	EK058G	EK057G	EK059G	*	EA005	ED093F		ED040	EA015
4A	MW-8	ALS	25-Nov-09	<1	360	73.8	360	-	180	<1	68.3	2100	7750	-	3.87	-	177	1.31	0.08	1.4	-	7.4	24	1010	354	4660
4A	QS-1			<1	356	73.9	356	-	181	<1	69.2	2100	7820	-	3.27	-	181	1.28	0.08	1.37	-	7.5	25	1030	363	4900
Relative Percentage Difference (RPD)				**<50%**	**1%**	**0.1%**	**1.12%**	**-**	**1%**	**<50%**	**1%**	**0%**	**1%**	**-**	**17%**	**-**	**2%**	**2%**	**0%**	**2%**	**-**	**NA**	**4%**	**2%**	**3%**	**5%**
4A	QS-1A	LABMARK		<10	352	-	352	5.4	189	<10	-	2100	7360	0.7	-	<0.1	168	4.0**	<0.5	-	<0.5	7.7	23.6	1320	280	4600
Relative Percentage Difference (RPD)				**<50%**	**2%**	**-**	**2%**	**-**	**5%**	**<50%**	**-**	**0%**	**5%**	**-**	**-**	**-**	**5%**	**101%**	**<50%**	**-**	**-**	**NA**	**2%**	**27%**	**23%**	**1%**
4B	QW_1_081211	ALS	08-Dec-11	<1	211	117	211	-	414	<1	108	3810	9470	-	3.89	-	376	1.2**	<0.01	1.2	-	5.64	17	1300	274	6150
4B	MW-09			<1	209	117	209	-	389	<1	108	3800	9470	-	4.05	-	357	1.27**	<0.01	1.27	-	5.64	17	1350	274	6280
Relative Percentage Difference (RPD)				**<50%**	**1%**	**0%**	**1.0%**	**-**	**6.2%**	**<50%**	**0%**	**0.26%**	**0%**	**-**	**4%**	**-**	**5%**	**6%**	**<50%**	**6%**	**-**	**NA**	**0%**	**4%**	**0%**	**2%**
4B	QW_1A_081211	GROUNDSWELL			200	-	-	-	400	-	-	3690	9680	-	-	-	410	5.2**	<0.1	-	-	5.64	17	1310	245	8290
Relative Percentage Difference (RPD)					**5%**	**-**	**-**	**-**	**3%**	**-**	**-**	**3%**	**2%**	**-**	**-**	**-**	**9%**	**125%**	**<50%**	**-**	**-**	**NA**	**0%**	**1%**	**11%**	**30%**

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "*" denotes criteria not specified.
- "-" = sample analysis not requested.
- "**"This sample was not received within the recommended holding time
"[b]" = "higher concentrations of toxicants may be tolerated occasionally if it is assumed that a person will ingest a maximum of 100 ml water during a normal swimming session compared with 2L/d for potable water." (ANZECC 1992).
Dark grey shading and bold indicates RPDs above 50%.
Orange shading indicates samples exceesing the ANZECC 1992 Recreational Water (Raw Water x1) guidelines
NA - pH results are reported as a range not as an RPD
Underline indicates samples exceeding the ANZECC 2000 aquatic ecosystem (slightly - moderately) disturbed system trigger value.

Table 52
Water Analytical Summary
Trip & Rinsate Blanks
Sub-Area 4A ESA - Groundwater Blank Samples
Melbourne Water, Werribee, Victoria

Sample Identification		Sample Date	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)	Cobalt	Copper	Manganese	Mercury	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc
Area	**Well ID**		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
RINSATE BLANKS																			
Area 4	TB-1	25/11/2009	-	<0.001	<0.001	<0.001	-	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	-	<0.001	-	-	<0.01	<0.005
Area 4	TB-2	27/11/2009	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
Area 4	TB-1_091211	9/12/2011	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
Area 4	TB-2_091211	9/12/2011	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
TRIP BLANKS																			
Area 4	RB-1	25/11/2009	-	<0.001	<0.001	<0.001	-	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	-	<0.001	-	-	<0.01	<0.005
Area 4	RB-2	26/11/2009	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
Area 4	RB-3	27/11/2009	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
Area 4	RB-1_071211	7/12/2011	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
Area 4	RB-2_081211	8/12/2011	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005

Notes: - < ## = analyte not detected at or above the laboratory reporting limit.
- "-" = sample analysis not requested.

Table 53

Soil Analytical Summary

Sub-Area 4A ESA - Summary of QA/QC Samples

Melbourne Water, Werribee, Victoria

Quality Sample Parent Identification	Quality Sample Duplicate Identification	Quality Sample Triplicate Identification
Pre April 2008		
4A/G28/0.25	4A/QS-3	4A/QS-3A
4A/G11/0.25	4A/QS-4	4A/QS-4A
4A/G16/0.25	4A/QS-5	4A/QS-5A
Post April 2008		
4A/T1B/0.5	4A/QS-12	4A/QS-12A
4A/T5/VS-5	4A/VS/QS-1	-
4A/VS-3	4A/VS/QS-2	-
4A/B-8/12.0	4A/B-8/QS-1	-
MW-8/3.0	MW-8/QS-1	MW-8/QS-1A

Note: "-" sample not collected
Sample highlighted yellow was taken from MW-7 location and has been incorrectly labelled due to an oversight by OTEK

Table 54
Soil Analytical Summary
Metals & Ammonia
Sub-Area 4A ESA - QA/QC Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Sample Date	Ammonia	Heavy Metals																		
					Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc	Mercury
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs				*	*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	*	60	*	*	50	200	1
NEPM "A" HILs - Residential				*	*	100	*	20	3,000	20	100 (CrVI) 12% (CrIII)	100	1,000	300	1,500	*	600	*	*	*	7,000	15
ANZECC 1992 Environmental Criteria				*	*20*	*20*	*	*	*	*3*	*50*	*	*60*	*300*	*	*	*	*	*50*	*60*	*200*	*1*
NEPM Background ranges				*	4-44^	1-50	100-3,000	*	*	1	5-1,000	1-40	2-100	2-200	850	*	5-500	*	1-25^	20-500	10-300	0.03
Laboratory Methodology (ALS)				EK055	EG005T																	EG035T
Laboratory Methodology (Labmark)				NA	E022.2																	E026.2
Sampled Pre April 2008																						
4A/G28/0.25	-	0.25	14-Apr-08	-	<5.0	5	30	<1.0	<50.0	<1.0	28	7	10	8	158	<2.0	18	<5.0	<5.0	33	28	<0.1
4A/QS-3				-	<5.0	5	30	<1.0	<50.0	<1.0	30	7	12	7	109	<2.0	21	<5.0	<5.0	33	27	<0.1
Relative Percentage Difference (RPD)				-	**<50%**	**0%**	**0%**	**<50%**	**<50%**	**<50%**	**7%**	**0%**	**18%**	**13%**	**37%**	**<50%**	**15%**	**<50%**	**<50%**	**0%**	**4%**	**<50%**
4A/QS-3A				-	<2.0	5.6	41	<2.0	4.4	<2.0	*52*	20	16	9.7	200	<2.0	35	<2.0	<2.0	53	35	<0.01
Relative Percentage Difference (RPD)				-	**<50%**	**11%**	**31%**	**<50%**	**<50%**	**<50%**	**60%**	**96%**	**46%**	**19%**	**23%**	**<50%**	**64%**	**<50%**	**<50%**	**47%**	**22%**	**<50%**
4A/G16/0.25	-	0.25	10-Apr-08	-	<5.0	6	160	<1.0	<50.0	<1.0	30	13	20	11	300	<2.0	33	<5.0	<5.0	37	38	<0.1
4A/QS-5				-	<5.0	6	130	<1.0	<50.0	<1.0	35	15	23	12	333	<2.0	38	<5.0	<5.0	42	46	<0.1
Relative Percentage Difference (RPD)				-	**<50%**	**0%**	**21%**	**<50%**	**<50%**	**<50%**	**15%**	**14%**	**14%**	**9%**	**10%**	**<50%**	**14%**	**<50%**	**<50%**	**13%**	**19%**	**<50%**
4A/QS-5A				-	<2.0	6.6	170	<2.0	5.2	<2.0	*61*	18	20	15	390	<2.0	44	<2.0	<2.0	45	49	0.02
Relative Percentage Difference (RPD)				-	**<50%**	**10%**	**6%**	**<50%**	**<50%**	**<50%**	**68%**	**32%**	**0%**	**31%**	**26%**	**<50%**	**29%**	**<50%**	**<50%**	**20%**	**25%**	**<50%**
Sampled Post April 2008																						
4A/B-8/12	MW-7	12.0	09-Feb-09	-	<2.0	<2.0	18	<2.0	6.2	<2.0	28	28	21	<2.0	550	<2.0	130	<2.0	<2.0	<2.0	51	<0.01
4A/B-8/QS-1				-	<2.0	<2.0	22	<2.0	6.1	<2.0	25	25	23	<2.0	490	<2.0	110	<2.0	<2.0	<2.0	49	<0.01
Relative Percentage Difference (RPD)				-	**0%**	**0%**	**20%**	**0%**	**2%**	**0%**	**11%**	**11%**	**9%**	**0%**	**12%**	**0%**	**17%**	**0%**	**0%**	**0%**	**4%**	**0%**
4A/T1B/0.5	-	0.5	13-Feb-09	-	<2.0	5.4	53	<2.0	2.2	<2.0	47	29	18	12	240	<2.0	28	<2.0	<2.0	39	34	0.03
4A/QS-12				-	<2.0	5.4	74	<2.0	2.5	<2.0	41	11	16	8.9	200	<2.0	27	<2.0	<2.0	40	38	0.01
Relative Percentage Difference (RPD)				-	**0%**	**0%**	**33%**	**0%**	**13%**	**0%**	**14%**	**90%**	**12%**	**30%**	**18%**	**0%**	**4%**	**0%**	**0%**	**3%**	**11%**	**100%**
4A/QS-12A				-	<5.0	6	60	<1.0	<50.0	<1.0	38	14	17	10	187	<2.0	29	<5.0	<5.0	39	35	<0.1
Relative Percentage Difference (RPD)				-	**0%**	**11%**	**12%**	**0%**	**<50%**	**0%**	**21%**	**70%**	**6%**	**18%**	**25%**	**0%**	**4%**	**0%**	**0%**	**0%**	**3%**	**<50%**
4A/T5/VS-5	-	3.3	27-Jul-09	<20	-	6	90	1	-	<1.0	30	12	15	13	206	-	29	-	-	41	22	<0.1
4A/VS/QS-1				<20	-	7	110	1	-	<1.0	35	18	17	15	279	-	32	-	-	46	25	0.5
Relative Percentage Difference (RPD)				**0%**	**-**	**15%**	**20%**	**0%**	**-**	**0%**	**15%**	**40%**	**13%**	**14%**	**30%**	**-**	**10%**	**-**	**-**	**11%**	**13%**	**133%**
4A/VS-3	-	0.10	29-Jul-09	50	-	<5.0	50	<1.0	-	<1.0	26	11	8	11	387	-	17	-	-	32	29	<0.1
4A/VS/QS-2				50	-	<5.0	50	<1.0	-	<1.0	27	11	8	12	439	-	17	-	-	32	29	<0.1
Relative Percentage Difference (RPD)				**0%**	**-**	**0%**	**0%**	**0%**	**-**	**0%**	**4%**	**0%**	**0%**	**9%**	**13%**	**-**	**0%**	**-**	**-**	**0%**	**0%**	**0%**
MW-8/3.0	MW-8	3.00	26-Oct-09	-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-
MW-8/QS-1				-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-
Relative Percentage Difference (RPD)				-	-	-	-	-	-	-	-	-	-	9%	-	-	-	-	-	-	-	-
MW-8/QS-1A				-	-	-	-	-	-	-	-	-	-	11	-	-	-	-	-	-	-	-
Relative Percentage Difference (RPD)				-	-	-	-	-	-	-	-	-	-	0%	-	-	-	-	-	-	-	-

Notes: mBGS = meters below ground surface.
"*" = criterion not specified.
"-" sample analysis not requested
"^" = ANZECC 1992 background range in the absence of a NEPM range.
"< ##" indicates analyte not detected at or above the laboratory reporting limit.
Light grey shading indicates concentrations above NEPM EILs.
Dark grey shading indicates RPDs are above 50%.
Dark, italic shading indicates value outside of ANZECC 1992 environmental criteria
Samples highlighted yellow were taken from MW-7 location and has been incorrectly labelled due to an oversight by OTEK

Table 55
Soil Analytical Summary
Polycyclic Aromatic Hydrocarbons (PAH), Total Petroleum Hydrocarbons (TPH) & BTEX
Sub-Area 4A ESA - QA/QC Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well Location	Sample Depth (mBGS)	Sample Date	POLYCYCLIC AROMATIC HYDROCARBONS																TPH				BTEX				
				Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)Anthracene	Chrysene	Benzo(b+k)Fluoranthene	Benzo(a)Pyrene	Indeno(1,2,3,-cd)Pyrene	DiBenz(a,h)Anthracene	Benzo(g,h,i)Perylene		C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)
				(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		NA	NA	NA	NA	*	*	*	*	*
NEPM "A" HILs - Residential				*	*	*	*	*	*	*	*	*	*	*	1	*	*	*		NA	NA	NA	NA	*	*	*	*	*
NSW EPA Criteria [1]				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		65		1,000		*	*	*	*	*
Laboratory Methodology (Labmark)				2100																1100		2000		EP080				
Laboratory Methodology (ALS)				EP075(SIM)B																EP080/071								
Sampled Pre April 2008																												
4A/G16/0.25	-	0.25	10-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<10	<50	<100	<100	-	-	-	-	-
4A/QS-5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<10	<50	<100	<100	-	-	-	-	-
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**		**<50%**	**<50%**	**<50%**	**<50%**	-	-	-	-	-
4A/QS-5A				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<5	<10	<20	<20	-	-	-	-	-
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**		**<50%**	**<50%**	**<50%**	**<50%**	-	-	-	-	-
4A/G28/0.25	-	0.25	14-Apr-08	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<10	<50	<100	<100	-	-	-	-	-
4A/QS-3				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<10	<50	<100	<100	-	-	-	-	-
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**		**<50%**	**<50%**	**<50%**	**<50%**	-	-	-	-	-
4A/QS-3A				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<5	<10	<20	<20	-	-	-	-	-
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**		**<50%**	**<50%**	**<50%**	**<50%**	-	-	-	-	-
Sampled Post April 2008																												
4A/T5/VS-5	-	3.3	27-Jul-09	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		<10	<50	<100	<100	-	-	-	-	-
4A/VS/QS-1				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		<10	<50	<100	<100	-	-	-	-	-
Relative Percentage Difference (RPD)				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		**<50%**	**<50%**	**<50%**	**<50%**	-	-	-	-	-
MW-8/3.0	MW-8	3.00	26-Oct-09	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
MW-8/QS-1				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**		**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
MW-8/QS-1A				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5		<5	<10	<20	<20	<0.2	<1.0	<1.0	<2.0	<1.0
Relative Percentage Difference (RPD)				**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**		**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**

Notes: mBGS = meters below ground surface.
"-" = sample not analysed.
< ## indicates analyte not detected above laboratory Limit of Reporting.
"*" = criterion not specified.
"NA" indicates no applicable guidelines
[1] New South Wales Environment Protection Authority (NSW EPA) threshold criteria for the assessment of service station sites. Levels at or below these thresholds indicate suitability for sensitive land use (NSW EPA, 1994).

Table 56
Soil Analytical Summary
Organochlorine Pesticides (OCPs)
Sub-Area 4A ESA - QA/QC Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	OCPs																			
			a-BHC	H.C.B	b-BHC	g-BHC Lindane	d-BHC	Heptachlor	Aldrin	Dieldrin	HeptachlorEpoxide	trans-Chlordane	cis-Chlordane	a-Endosulphan	Endrin	b-Endosulphan	4-4'-DDD	4-4'-DDE	4-4'-DDT	Endrin Aldehyde	Endosulphansulphate	Endrin Ketone	Methoxychlor
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	10	10(1)	10(1)	*	50(2)	50(2)	*	*	*	200(3)	200(3)	200(3)	*	*	*	*
Laboratory Methodology (ALS)			EP068A																				
Laboratory Methodology (Labmark)			2300																				
Sampled Pre April 2008																							
4A/G11/0.25	0.25	9-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02
4A/QS-4			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
4A/QS-4A			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
Sampled Post April 2008																							
4A/T5/VS-5	3.3	27-Jul-09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02
4A/VS/QS-1			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.02	<0.05	<0.05	<0.05	<0.02
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**

Notes: mBGS = meters below ground surface.
- < ## indicates analyte not detected above laboratory Limit of Reporting.

"*" criterion not specified

(1) This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.

(2) This criterion applies to the sum of the determined concentrations of trans-Chlordane and cis-Chlordane.

(3) This criterion applies to the sum of the determined concentrations of 4,4'-DDD, 4,4'-DDE and 4,4'-DDT.

"NA" indicates no applicable guidelines

Table 57
Soil Analytical Summary
Organophosphate Pesticides (OPP)
Sub-Area 4A ESA - QA/QC Samples
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Depth (mBGS)	Sample Date	OPPs																			
			Azinophos methyl	Bromophos	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Endosulfan sulphate	Ethion	Fenamiphos	Fenthion	Malathion	Methyl parathion	Monocrotophos	Parathion	Pirimphos-ethyl	Prothiofos
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
Laboratory Methodology (LABMARK)			2400																			
Laboratory Methodology (ALS)			EP068A																			
Sampled Pre April 2008																						
4A/G11/0.25	0.25	09-Apr-08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
4A/QS-4			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2	<0.2	<0.05	<0.05
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
4A/QS-4A			-	-	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	-	-
Relative Percentage Difference (RPD)			**-**	**-**	**-**	**-**	**<50%**	**<50%**	**-**	**<50%**	**-**	**-**	**<50%**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**-**	**-**

Notes: mBGS = meters below ground surface.
< ## indicates analyte not detected above laboratory Limit of Reporting.
"*" = criteria not specified.
"-" = sample not analysed.

Table 58

Trip and Rinsate Blank Sample Identification

Sub-Area 4A ESA - Trip and Rinsate Blanks

Melbourne Water, Werribee, Victoria

Trip Blank Sample Identification	Rinsate Blank Sample Identification	Sample Date
Sampled Pre April 2008		
4A/TB-1	4A/RB-1	07-Apr-08
4A/TB-2	4A/RB-2	08-Apr-08
4A/TB-3	4A/RB-3	09-Apr-08
4A/TB-4	4A/RB-4	10-Apr-08
-	4A/RB-5	11-Apr-08
-	4A/RB-6	14-Apr-08
-	4A/RB-7	15-Apr-08
-	4B/RB-17*	17-Apr-08
Sampled Post April 2008		
4A/B-8/TB-1	-	09-Feb-09
4A/TB-11	4A/RB-11	13-Feb-09
4A/TB-13	-	27-Jul-09
4A/TB-14	4A/RB-14	29-Jul-09
MW-8/TB-1	MW-8/RB-1	26-Oct-09

Notes: "-" indicates no blank sample collected

Sample highlighted yellow was taken from MW-7 and has been incorrectly labelled due to an oversight by OTEK

*4A\T5 was sampled on 17/4/08. 4B/RB-17 has therefore been included as works were done within Sub Area 4B on that day.

Table 59
Soil Analytical Summary
Metals
Sub-Area 4A ESA - Trip and Rinsate Blanks
Melbourne Water, Werribee, Victoria

Sample Identification	Monitoring Well Location	Sample Date	HEAVY METALS																	
			Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc
			Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mn	Hg	Mo	Ni	Se	Sn	V	Zn
			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Laboratory Methodology (Labmark)			E022.1											E026.1	E022.1					
Laboratory Methodology (ALS)			EG020F											EG035F	EG020F					
Sampled Pre April 2008																				
TRIP BLANKS																				
4A/RB-2	-	08-Apr-08	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
4A/RB-5	-	11-Apr-08	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
4A/RB-7	-	15-Apr-08	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
4B/RB-17*	-	17-Apr-08	-	<0.001	-	-	-	-	<0.001	-	<0.001	-	-	-	-	-	-	-	-	-
RINSATE BLANKS																				
4A/TB-2	-	08-Apr-08	<0.001	<0.001	<0.001	<0.001	<0.05	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.001	<0.01	<0.001	<0.01	<0.005
Sampled Post April 2008																				
TRIP BLANKS																				
4A/B-8/TB-1	MW-7	09-Feb-09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4A/TB-11	-	13-Feb-09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4A/TB-13	-	27-Jul-09	-	<0.001	<0.001	<0.001	-	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	-	<0.001	-	-	<0.01	<0.005
4A/TB-14	-	29-Jul-09	-	<0.001	<0.001	<0.001	-	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	-	<0.001	-	-	<0.01	<0.005
MW-8/TB-1	MW-8	26-Oct-09	-	<0.001	<0.001	<0.001	-	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	-	<0.001	-	-	<0.01	<0.005
RINSATE BLANKS																				
4A/RB-11	-	13-Feb-09	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.0001	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
4A/RB-14	-	29-Jul-09	-	<0.001	<0.001	<0.001	-	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	-	<0.001	-	-	<0.01	<0.005
MW-8/RB-1	MW-8	26-Oct-09	-	<0.001	<0.001	<0.001	-	<0.0001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0001	-	<0.001	-	-	<0.01	<0.005

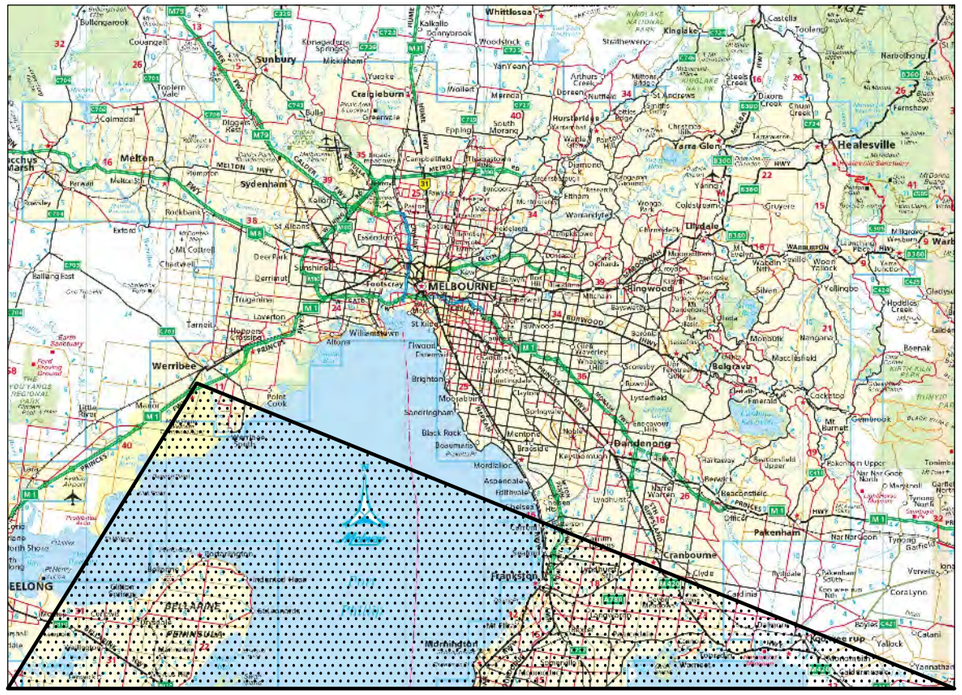
Notes: "<##" indicates analyte not detected at or above laboratory reporting limits.
"-" indicates sample analysis not requested for specific analyte
Sample highlighted yellow was taken from MW-7 and has been incorrectly labelled due to an oversight by OTEK
*4A\T5 was sampled on 17/4/08. 4B/RB-17 has therefore been included as works were done within Sub Area 4B on that day.

Table 60
Soil Analytical Summary
Total Petroleum Hydrocarbons (TPH) & Polycyclic Aromatic Hydrocarbons (PAH)
Sub-Area 4A ESA - Trip and Rinsate Blanks
Melbourne Water, Werribee, Victoria

Sample Identification	Sample Date	TPH			PAH															
		C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b&k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Laboratory Methodology (ALS)		EP080/071			EP075(SIM)B															
Sampled Pre April 2008																				
TRIP BLANKS																				
4A/TB-1	07-Apr-08	<50	<100	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/TB-3	09-Apr-08	-	-	-	<1	<1	<1	<1	<0.5	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4A/TB-4	10-Apr-08	<50	<100	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RINSATE BLANKS																				
4A/RB-1	07-Apr-08	<50	<100	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/RB-3	09-Apr-08	-	-	-	<1	<1	<1	<1	<0.5	<2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4A/RB-4	10-Apr-08	<50	<100	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4A/RB-6	14-Apr-08	<50	<100	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes: "< ##" indicates analyte not detected at or above laboratory reporting limits.
"-" indicates sample analysis not requested for specific analyte

Figures



REGIONAL MAP

NOT TO SCALE

LOCALITY MAP

METRES

0 100 200 300 400 500 1000

APPROXIMATE SCALE ONLY

VICINITY MAP

METRES

0 50 100 150 300m

APPROXIMATE SCALE ONLY

ISSUE	DATE	AMENDMENTS	DRN	CKD
01	05.03.09	ORIGINAL ISSUE	REM	EB

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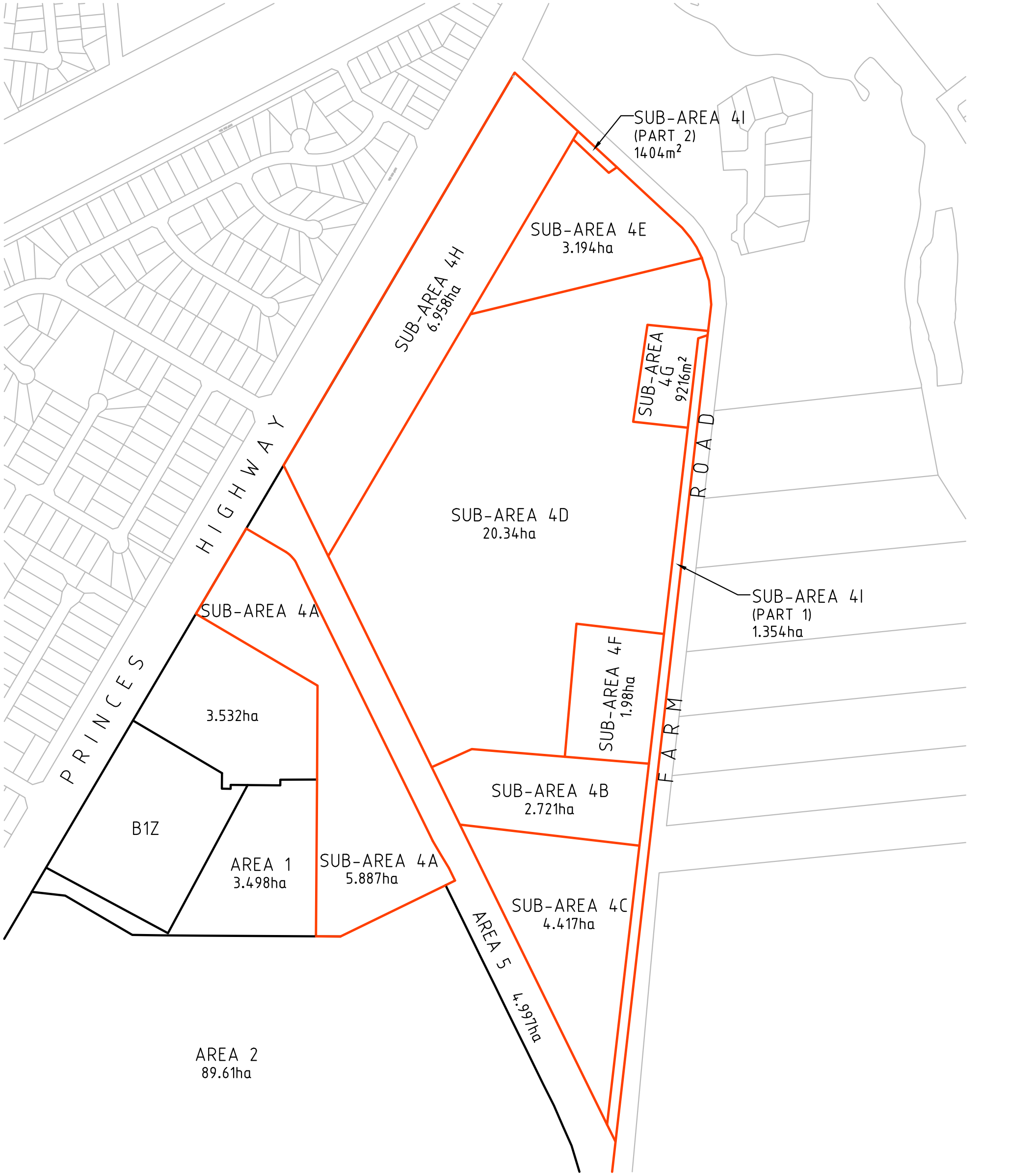
REGIONAL & VICINITY MAPS

SUB-AREA 4A ENVIRONMENTAL SITE ASSESSMENT

MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE	DRAWN: REM	DATE: 05.03.09	CHECKED	APPROVED	FIG No:
A3	REV: 01	DWG NAME: 3106004F4A1			FIGURE 1



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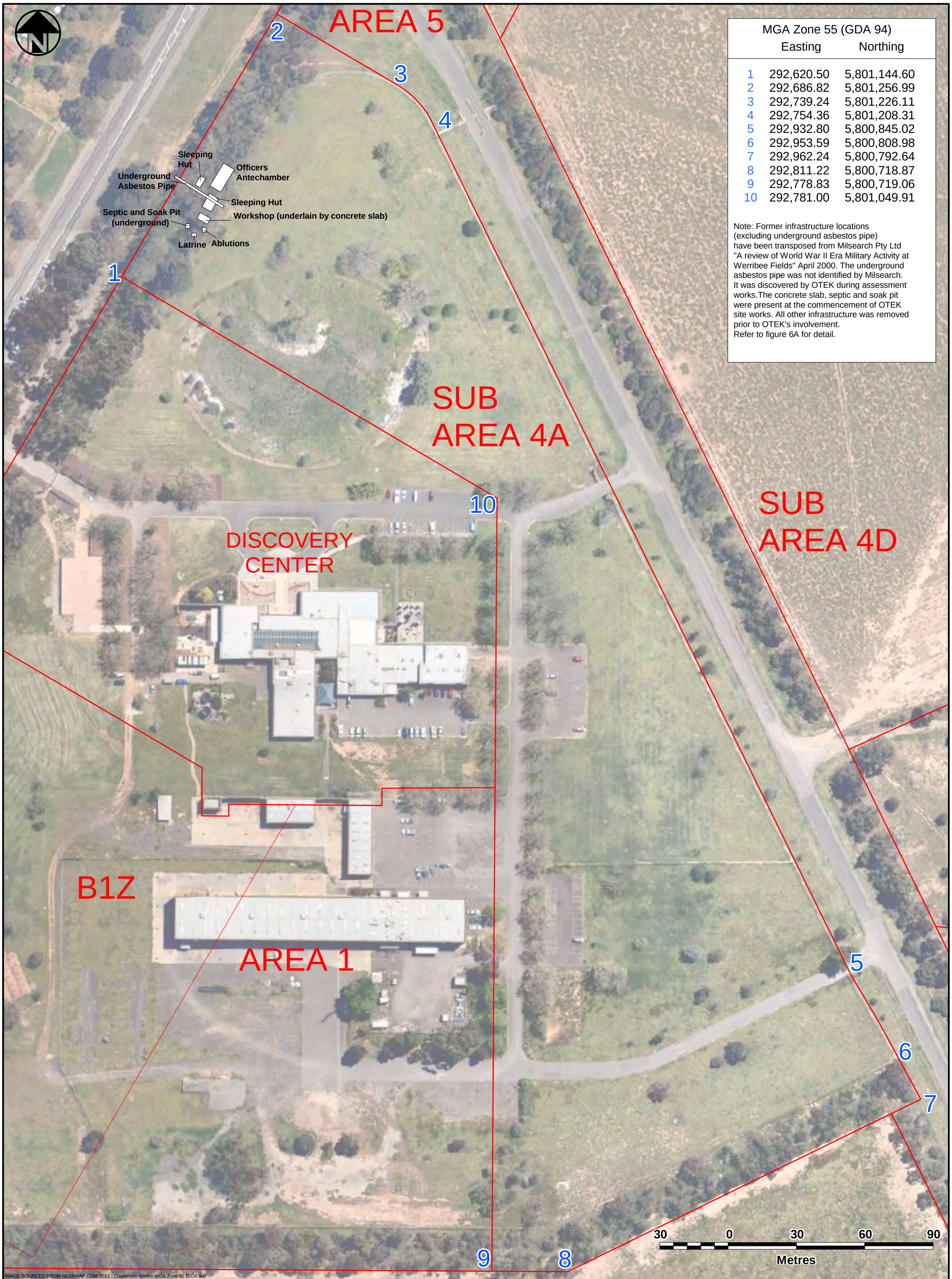
RIVERWALK AREA SITE MAP

RIVERWALK AREAS 1, 2 & 4

MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE	DRAWN: REM	DATE: 04.07.11	CHECKED	APPROVED	FIG No:
A3	REV: 01	DWG NAME: 3106004/1300F01			FIGURE 2



MGA Zone 55 (GDA 94)	Easting	Northing
1	292,620.50	5,801,144.60
2	292,686.82	5,801,256.99
3	292,739.24	5,801,226.11
4	292,754.36	5,801,208.31
5	292,932.80	5,800,845.02
6	292,953.59	5,800,808.98
7	292,962.24	5,800,792.64
8	292,811.22	5,800,718.87
9	292,778.83	5,800,719.06
10	292,781.00	5,801,049.91

Note: Former infrastructure locations (excluding underground asbestos pipe) have been transposed from Milsearch Pty Ltd "A review of World War II Era Military Activity at Werribee Fields" April 2000. The underground asbestos pipe was not identified by Milsearch. It was discovered by OTEK during assessment works.The concrete slab, septic and soak pit were present at the commencement of OTEK site works. All other infrastructure was removed prior to OTEK's involvement.
Refer to figure 6A for detail.

IMAGE SOURCED FROM NEARMAP.COM 2011 - Coordinate system MGA Zone 55 (GDA 94)

ISSUE	DATE	AMENDMENTS	DRN	CKD
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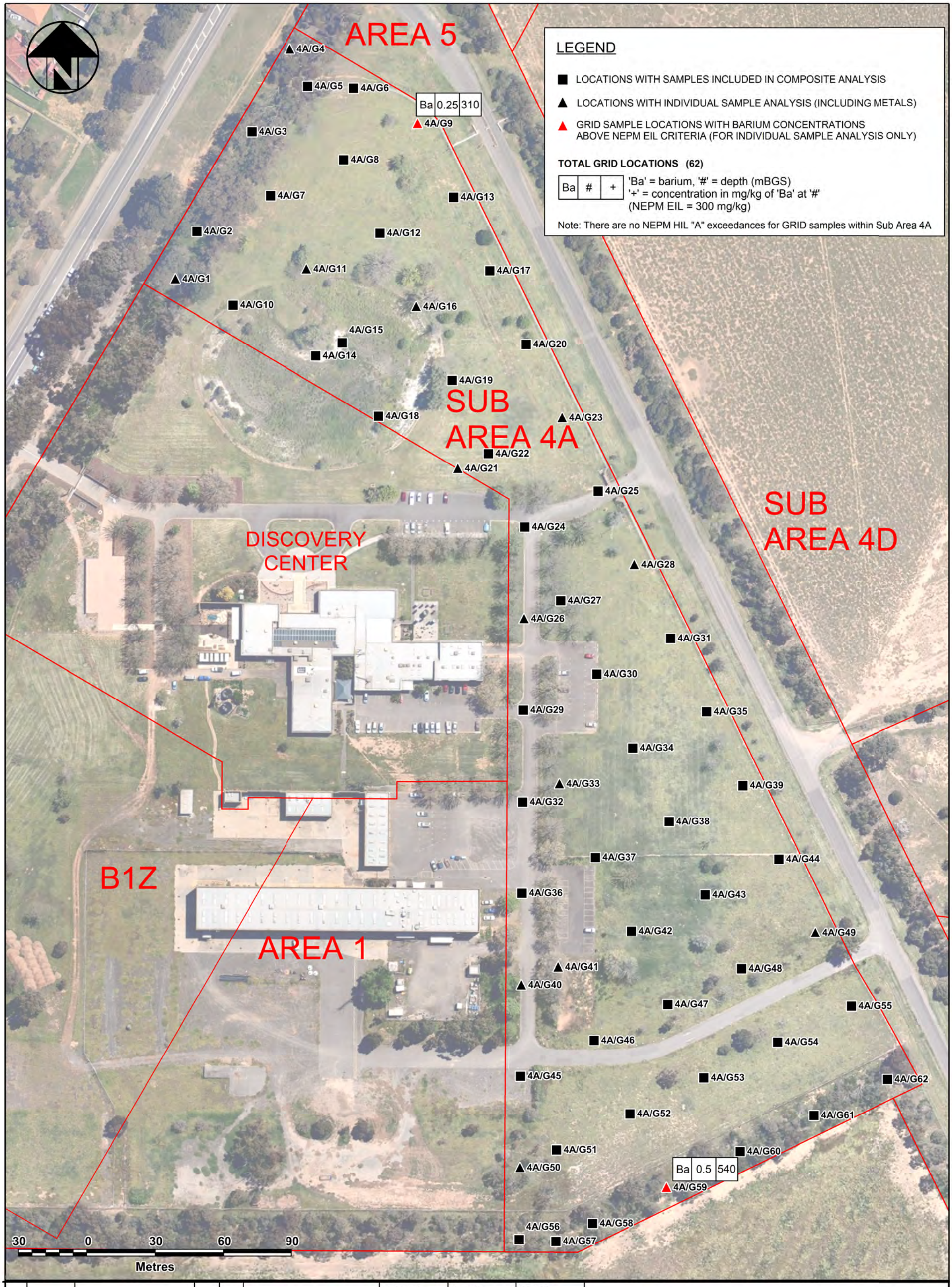
RAAF INFRASTRUCTURE LOCATIONS

SUB-AREA 4A ESA REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE: A3 | REV: 01 | DATE: 31/10/2012 | DRAWN: ENV | DWG NAME: 4A 3106004 revAF03

FIG No: **FIGURE 3**



ISSUE	DATE	AMENDMENTS	DRN	CKD
02	08.05.12	UPDATE LABELS	LTD	
01	21.04.11	ORIGINAL ISSUE	LTD	

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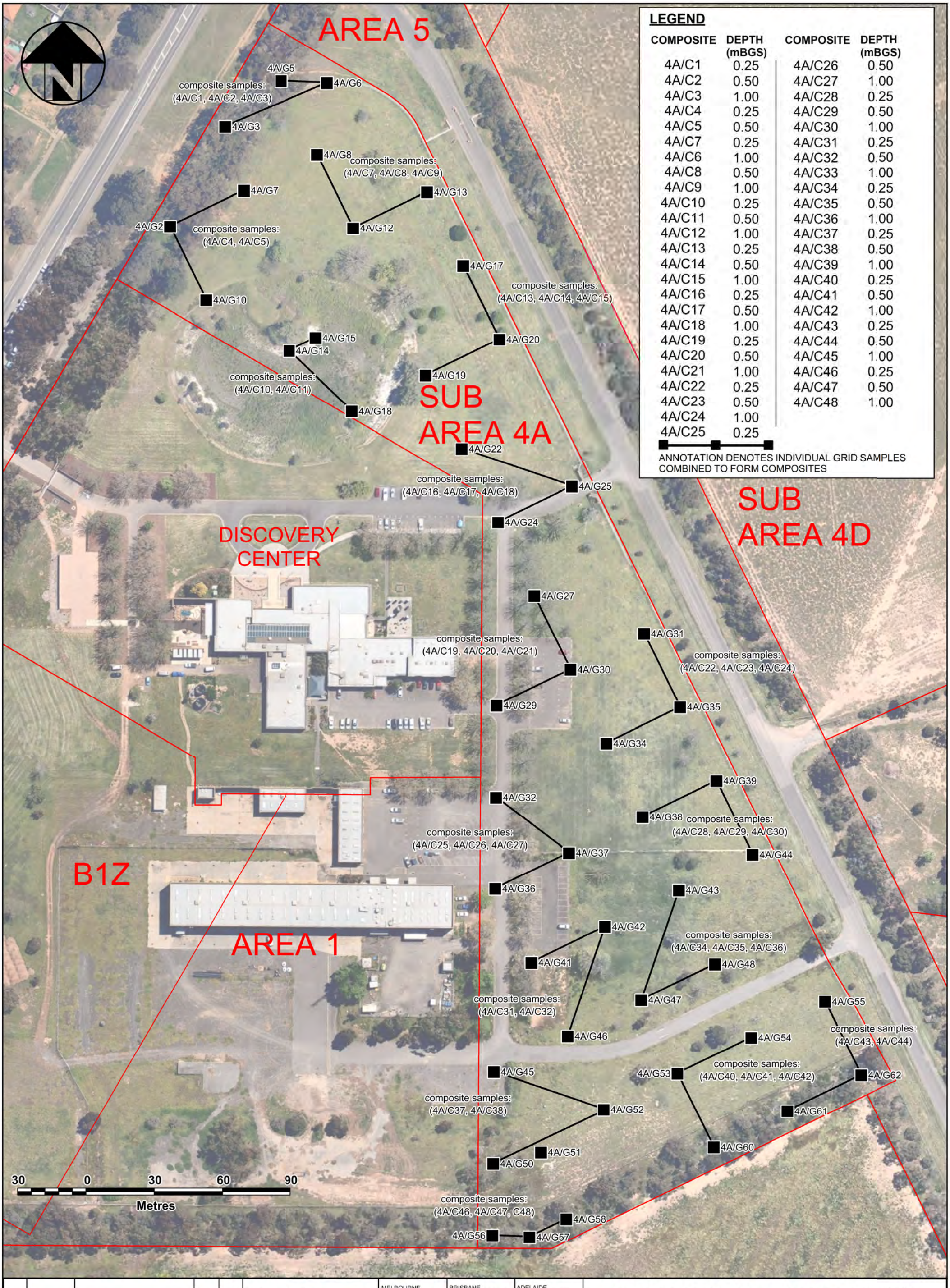
SUB-AREA 4A GRID SOIL SAMPLING LOCATIONS

SUB AREA 4A ESA REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE:	REV:	DATE:	CHECKED	APPROVED	FIG No:
A3	02	21.04.11	LTD		FIGURE 4
	DRAWN: ENV	DWG NAME:			



LEGEND

COMPOSITE	DEPTH (mBGS)	COMPOSITE	DEPTH (mBGS)
4A/C1	0.25	4A/C26	0.50
4A/C2	0.50	4A/C27	1.00
4A/C3	1.00	4A/C28	0.25
4A/C4	0.25	4A/C29	0.50
4A/C5	0.50	4A/C30	1.00
4A/C7	0.25	4A/C31	0.25
4A/C6	1.00	4A/C32	0.50
4A/C8	0.50	4A/C33	1.00
4A/C9	1.00	4A/C34	0.25
4A/C10	0.25	4A/C35	0.50
4A/C11	0.50	4A/C36	1.00
4A/C12	1.00	4A/C37	0.25
4A/C13	0.25	4A/C38	0.50
4A/C14	0.50	4A/C39	1.00
4A/C15	1.00	4A/C40	0.25
4A/C16	0.25	4A/C41	0.50
4A/C17	0.50	4A/C42	1.00
4A/C18	1.00	4A/C43	0.25
4A/C19	0.25	4A/C44	0.50
4A/C20	0.50	4A/C45	1.00
4A/C21	1.00	4A/C46	0.25
4A/C22	0.25	4A/C47	0.50
4A/C23	0.50	4A/C48	1.00
4A/C24	1.00		
4A/C25	0.25		

ANNOTATION DENOTES INDIVIDUAL GRID SAMPLES COMBINED TO FORM COMPOSITES

ISSUE	DATE	AMENDMENTS	DRN	CKD
02	08.05.12	UPDATE LABELS	LTD	
01	21.04.11	ORIGINAL ISSUE	LTD	

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SUB-AREA 4A COMPOSITE SOIL SAMPLING LOCATIONS

SUB AREA 4A ESA REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE:	REV:	DATE:	CHECKED	APPROVED	FIG No:
A3	02	21.04.11	LTD		FIGURE 5
	DRAWN: ENV	DWG NAME:			

ISSUE	DATE	AMENDMENTS	DRN	CKD
01	05.10.12	ORIGINAL ISSUE	LTD	RE

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INFRASTRUCTURE EXCAVATION AREAS AND MAN-MADE POND SOIL PROFILE INVESTIGATION

SUB AREA 4A ESA REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE: A3 | REV: 01 | DATE: 05.10.12 | DRAWN: ENV | DWG NAME: 4A 3106004 r01 F06A | FIG No: **FIGURE 6**

FORMER WORKSHOP
CONCRETE SLAB

FORMER UNDERGROUND
ASBESTOS PIPE

FORMER SEPTIC

FORMER
SOAKPIT

Sub Area 4A

4A/VS-6 (0.7mBGS)

0.7

22.00 m

4A/VS-3 (0.1mBGS)

WALL SAMPLE (1.3mBGS)
4A/T5/VS-2

3.00 m

0.1

4A/VS-4 (0.1mBGS)

0.7

4A/VS-7 (0.7mBGS)

BASE SAMPLE (3.3mBGS)
4A/T5/VS-5

3.3

WALL SAMPLE (1.2mBGS)
4A/T5/VS-1

1.5

3.00 m

WALL SAMPLE 4A/T5/VS-4 (1.3mBGS)

4A/T5/VS-3
WALL SAMPLE (0.9mBGS)

4A/T3A

4A/T5

4A/T3B

Ba | 1.0 | 430

Ba | 0.10 | 1530

4A/VS-2 (0.1mBGS)

0.1

0.1

4A/T2A

4A/T2B

4A/VS-1 (0.1mBGS)

13.00 m

4A/T1A

4A/T1B

5 0 5 10 15

Metres

LEGEND

	Number of Samples
✚ Underground asbestos pipe validation sampling - OTEK 2010	(2)
◆ Septic, soak pit, latrines and ablutions validation sampling - OTEK 2009	(7)
▲ Target sampling - septic and soak pit, latrines and ablutions - OTEK 2009	(7)
▼ Workshop concrete slab validation sampling - OTEK 2009	(2)

▲ ◆ Indicates locations with barium concentrations above NEPM EIL criteria

Septic, soak pit, latrines and ablutions excavation/scrape boundary

Workshop concrete slab scrape boundary

Underground asbestos pipe excavation boundary

Fiber-optic cable location

Audit area boundary

Ba | # | + — 'Ba' = barium, '#' = depth (mBGS) '+' = concentration in mg/kg of 'Ba' at '#' (NEPM EIL = 300 mg/kg)

#.# Trench/Scrape/Excavation Depth (mBGS)

Note: There are no NEPM HIL exceedances

ISSUE	DATE	AMENDMENTS	DRN	CKD
01	31/10/2012	ORIGINAL ISSUE	LTD	RE

"COMMERCIAL IN CONFIDENCE"

Image sourced from nearmap.com 2012
Coordinate system - (GDA 94) MGA Zone 55

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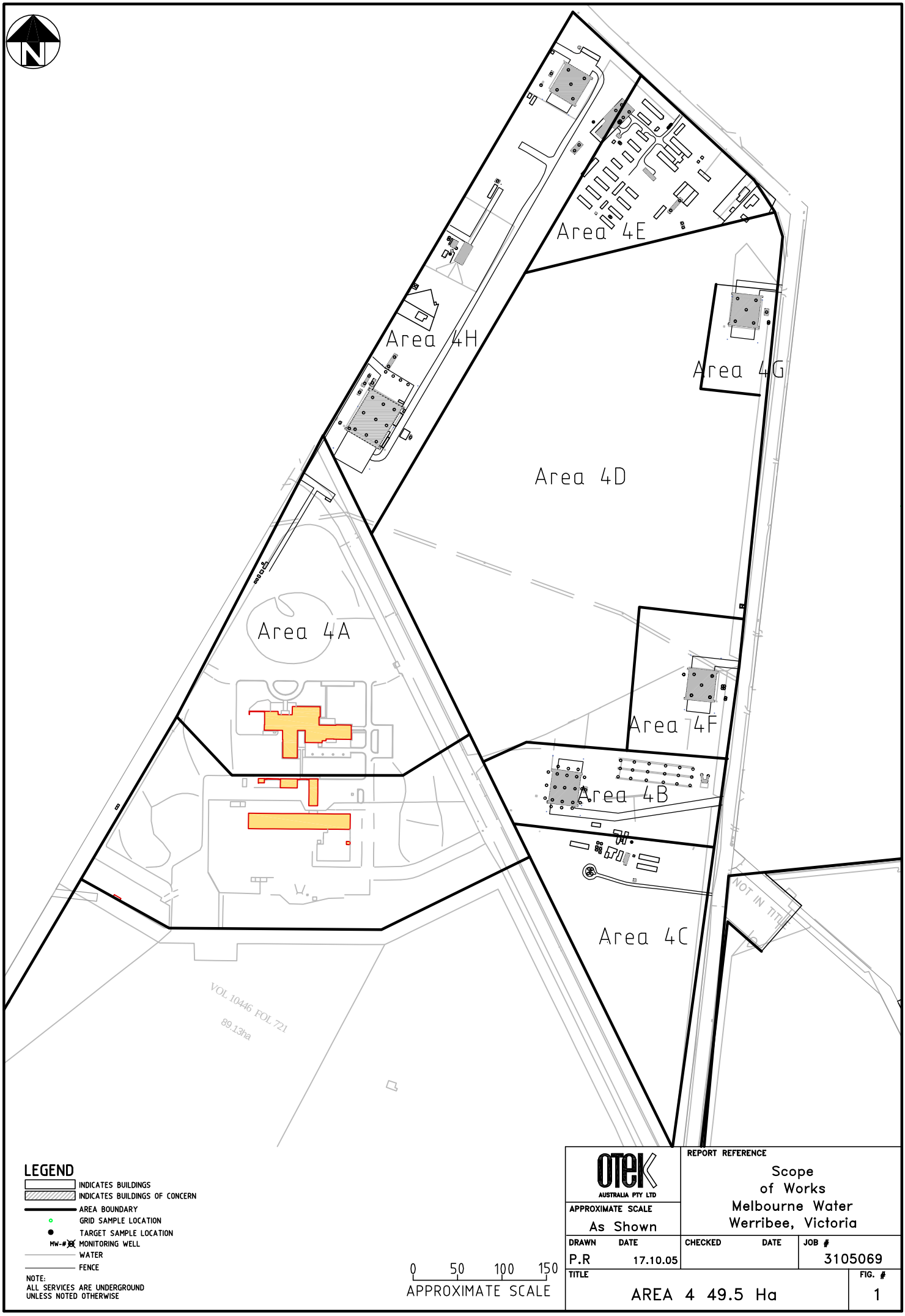
INFRASTRUCTURE TARGET SAMPLING LOCATIONS, EXCAVATION AREAS AND VALIDATION SAMPLING LOCATIONS

SUB-AREA 4A ESA REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE: A3 | DRAWN: ENV | DATE: 31/10/2012 | REV: 01 | DWG NAME: 4A 3106004 r01 F06A | FIG No: FIGURE 6A

Appendix A

Former and Existing Boundaries



LEGEND

- INDICATES BUILDINGS
- INDICATES BUILDINGS OF CONCERN
- AREA BOUNDARY
- GRID SAMPLE LOCATION
- TARGET SAMPLE LOCATION
- MW-# MONITORING WELL
- WATER
- FENCE

NOTE:
ALL SERVICES ARE UNDERGROUND
UNLESS NOTED OTHERWISE

0 50 100 150
APPROXIMATE SCALE

OTEK AUSTRALIA PTY LTD

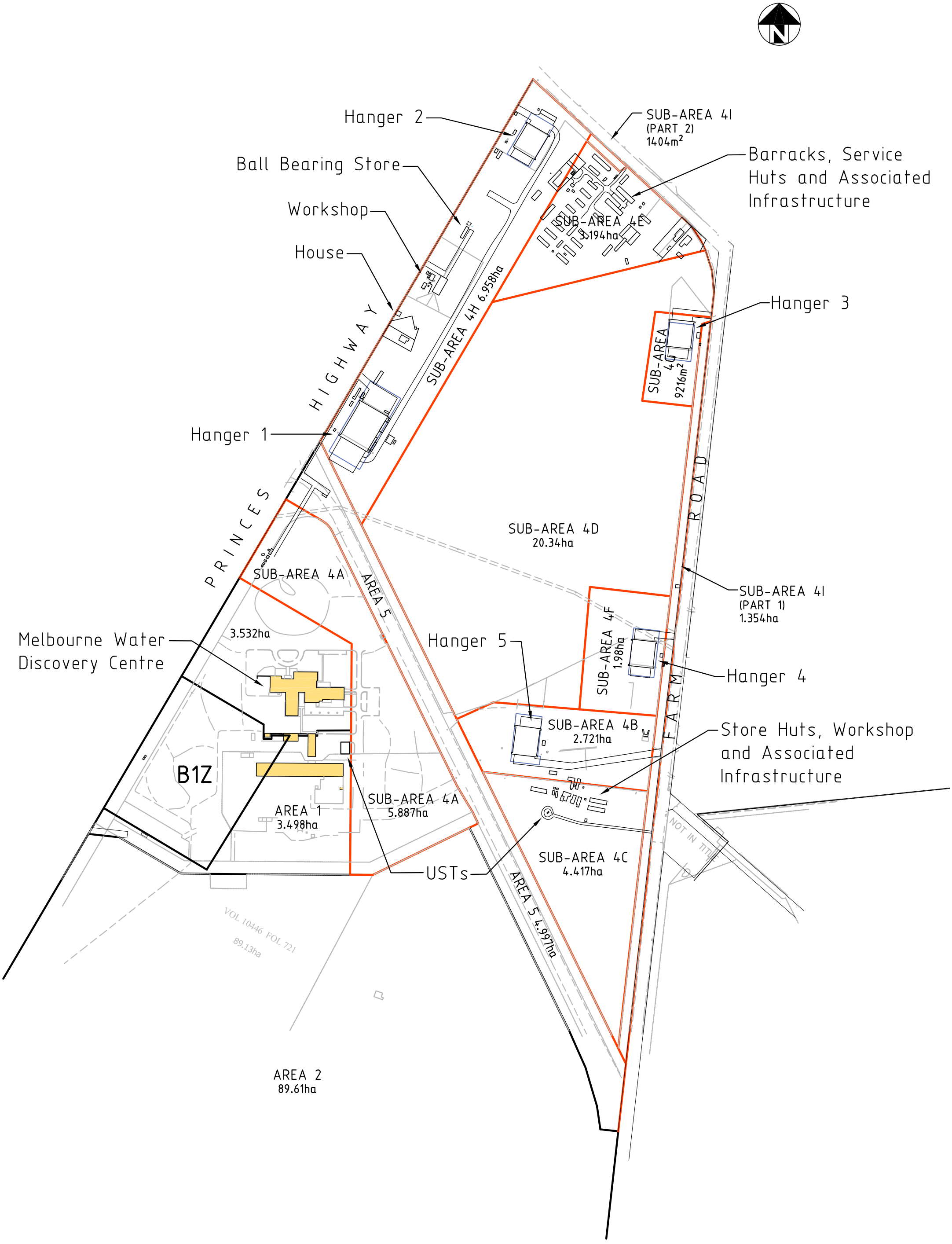
REPORT REFERENCE
Scope of Works
Melbourne Water
Werribee, Victoria

APPROXIMATE SCALE			
As Shown			
DRAWN	DATE	CHECKED	DATE
P.R	17.10.05		

JOB # 3105069

TITLE: AREA 4 49.5 Ha

FIG. # 1



ISSUE	DATE	AMENDMENTS	DRN	CKD
02	14.10.10	TURN OFF SHADING	KJB	EB
01	21.09.09	ORIGINAL ISSUE	MAM	TSA

ABN 32 054 371 596

MELBOURNE
TEL (03) 9525 5155
FAX (03) 9593 8555

BRISBANE
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FAX (07) 3426 5299

SYDNEY
TEL (02) 9417 4499
FAX (02) 9417 2314

PERTH
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FAX (08) 9227 9009

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RIVERWALK AREA 4
HISTORICAL INFRASTRUCTURE
MELBOURNE WATER, WERRIBEE, VIC

SHEET SIZE	DRAWN	DATE	CHECKED	APPROVED	FIG No:
A3	KJB	14.10.10			FIGURE 3
	REV: 02	DWG NAME: 316004_1399			

REGISTER SEARCH STATEMENT (Title Search) Transfer of Land Act 1958

VOLUME 11367 FOLIO 778 Security no : 124043522685M
Produced 17/10/2012 04:20 pm

LAND DESCRIPTION

Lot B on Plan of Subdivision 636839Q.
PARENT TITLE Volume 11309 Folio 105
Created by instrument PS636839Q 02/08/2012

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
MELBOURNE WATER CORPORATION of 990 LA TROBE STREET DOCKLANDS VIC 3008
PS636839Q 02/08/2012

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan set out under DIAGRAM LOCATION below.

NOTICE as to part Section 47(2) Heritage Act 1995
REGISTER NO. 1884
X234908X 29/12/2000

AGREEMENT Section 173 Planning and Environment Act 1987
AG017913K 08/08/2008

DIAGRAM LOCATION

SEE PS636839Q FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NUMBER		STATUS	DATE
PS636839Q (S)	PLAN OF SUBDIVISION	Registered	02/08/2012

DOCUMENT END

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C : 20/07/2012

PLAN OF SUBDIVISION

STAGE NO	LRS USE ONLY	PLAN NUMBER
———	EDITION 1	PS 636839Q

LOCATION OF LAND

PARISH: MAMBOURIN
TOWNSHIP: WERRIBEE
CROWN ALLOTMENTS: 22A (PART) & 10A (PART)

PARISH: MAMBOURIN
CROWN ALLOTMENTS: 4A, 5A, 6A, 7A, 8A & 9A
CROWN ALLOTMENTS: G (PT) & H (PT) SECTION 7
CROWN ALLOTMENT: 7 (PT) & 8 (PT) SECTION 8

LAST PLAN REF: PS 641301K LOT A
TITLE REFERENCE: VOL 11309 FOL 105

POSTAL ADDRESS: CNR PRINCES HIGHWAY & MALTBY BYPASS WERRIBEE 3030

MGA CO-ORDINATES: E 292 680
OF APPROX. CENTRE N 5 800 580
OF LAND IN PLAN ZONE 55

VESTING OF ROADS OR RESERVES

IDENTIFIER	COUNCIL/BODY/PERSON
R1 (ROAD)	WYNDHAM CITY COUNCIL
RESERVE No.1	POWERCOR AUSTRALIA LTD

COUNCIL CERTIFICATION AND ENDORSEMENT

COUNCIL NAME: WYNDHAM CITY COUNCIL REF:

(1) THIS PLAN IS CERTIFIED UNDER SECTION 6 OF THE SUBDIVISION ACT 1988.

(2) THIS PLAN IS CERTIFIED UNDER SEC. 11(7) OF THE SUBDIVISION ACT 1988.
DATE OF ORIGINAL CERTIFICATION UNDER SECTION 6 / /

(3) THIS IS A STATEMENT OF COMPLIANCE ISSUED UNDER SECTION 21 OF THE SUBDIVISION ACT 1988

OPEN SPACE:

(A) A REQUIREMENT FOR PUBLIC OPEN SPACE UNDER SECTION 18 OF THE SUBDIVISION ACT 1988 HAS NOT BEEN MADE

(B) THE REQUIREMENT HAS BEEN SATISFIED

(C) THE REQUIREMENT IS TO BE SATISFIED IN STAGE:

COUNCIL DELEGATE
COUNCIL SEAL
SURVEYOR'S PLAN VERSION
DATE / /

RE-CERTIFIED UNDER SECTION 11(7) OF THE SUBDIVISION ACT 1988
COUNCIL DELEGATE
COUNCIL SEAL
SURVEYOR'S PLAN VERSION
DATE / /

NOTATIONS

DEPTH LIMITATION:
DOES NOT APPLY

THIS IS A SPEAR PLAN

STAGING:
THIS IS NOT A STAGED SUBDIVISION
PLANNING PERMIT NO: WYP4474/10

SURVEY:
THIS PLAN IS BASED ON SURVEY (PS 636838S)
THIS SURVEY HAS BEEN CONNECTED TO PERMANENT MARKS:
IN PROCLAIMED SURVEY AREA NUMBER:

OTHER PURPOSE OF PLAN:
TO REMOVE PART OF EASEMENT E-6 ON PS 641301K AND CREATED IN PS 636838S AND AFFECTING ROAD R1 ON THIS PLAN.

GROUNDS FOR EASEMENT REMOVAL:
WYNDHAM CITY COUNCIL
PLANNING PERMIT No. WYP4613/10

LOTS 1 TO 117 (BOTH INCLUSIVE) & LOT A HAVE BEEN OMITTED FROM THIS PLAN

RIVERWALK RELEASE 2

EASEMENT INFORMATION

LEGEND: A - APPURTENANT EASEMENT E - ENCUMBERING EASEMENT R - ENCUMBERING EASEMENT (ROAD)

EASEMENT REFERENCE	PURPOSE	WIDTH (METRES)	ORIGIN	LAND BENEFITED/IN FAVOUR OF
			SEE SHEET 2	

LRS USE ONLY

STATEMENT OF COMPLIANCE
EXEMPTION STATEMENT
RECEIVED ☑
DATE **23/07/12**

LRS USE ONLY

PLAN REGISTERED
TIME **11:17am**
DATE **2/08/12**
G Venn
ASSISTANT REGISTRAR OF TITLES

SHEET 1 OF 12 SHEETS

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE: DIGITALLY SIGNED

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO ..... | PLAN NUMBER **PS 636839Q**

EASEMENT INFORMATION

LEGEND: A - APPURTENANT EASEMENT E - ENCUMBERING EASEMENT R - ENCUMBERING EASEMENT (ROAD)

EASEMENT REFERENCE	PURPOSE	WIDTH (METRES)	ORIGIN	LAND BENEFITED/IN FAVOUR OF
E-1	SEWERAGE	3	PS412756U	CITY WEST WATER LIMITED
E-2	SEWERAGE	2.50	PS636838S	CITY WEST WATER LIMITED
E-3	DRAINAGE	3	PS641301K	WYNDHAM CITY COUNCIL
	SEWERAGE	3	PS641301K	CITY WEST WATER LIMITED
E-4	SEWERAGE	2	PS641301K	CITY WEST WATER LIMITED
E-5	DRAINAGE	2	PS641301K	WYNDHAM CITY COUNCIL
E-6	DRAINAGE	SEE PLAN	PS636838S	WYNDHAM CITY COUNCIL
	SEWERAGE	SEE PLAN	PS636838S	CITY WEST WATER LIMITED
E-7	DRAINAGE	SEE PLAN	PS636838S	WYNDHAM CITY COUNCIL
E-8	SEWERAGE	2	PS636838S	CITY WEST WATER LIMITED
E-9	DRAINAGE	2	PS636838S	WYNDHAM CITY COUNCIL
E-10	POWERLINE	SEE PLAN	PS636838S - SEC 88 ELECTRICITY INDUSTRY ACT 2000	POWERCOR AUSTRALIA LTD
E-11	DRAINAGE	2	THIS PLAN	WYNDHAM CITY COUNCIL
E-12	SEWERAGE	2	THIS PLAN	CITY WEST WATER LIMITED
E-13	DRAINAGE	3	THIS PLAN	WYNDHAM CITY COUNCIL
	SEWERAGE	3	THIS PLAN	CITY WEST WATER LIMITED
E-14	DRAINAGE	SEE PLAN	PS636838S	MELBOURNE WATER CORPORATION
E-15	SEWERAGE	2.50	PS636838S	CITY WEST WATER LIMITED
	DRAINAGE	2.50	PS636838S	MELBOURNE WATER CORPORATION
E-16	DRAINAGE	4	THIS PLAN	WYNDHAM CITY COUNCIL
E-17	SEWERAGE	2	THIS PLAN	CITY WEST WATER LIMITED
E-18	DRAINAGE	SEE PLAN	THIS PLAN	WYNDHAM CITY COUNCIL
	SEWERAGE	SEE PLAN	THIS PLAN	CITY WEST WATER LIMITED
E-19	DRAINAGE	SEE PLAN	PS636838S	MELBOURNE WATER CORPORATION
	SEWERAGE	SEE PLAN	THIS PLAN	CITY WEST WATER LIMITED
E-20	POWERLINE	1.50	THIS PLAN - SEC 88 ELECTRICITY INDUSTRY ACT 2000	POWERCOR AUSTRALIA LTD

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 2

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LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

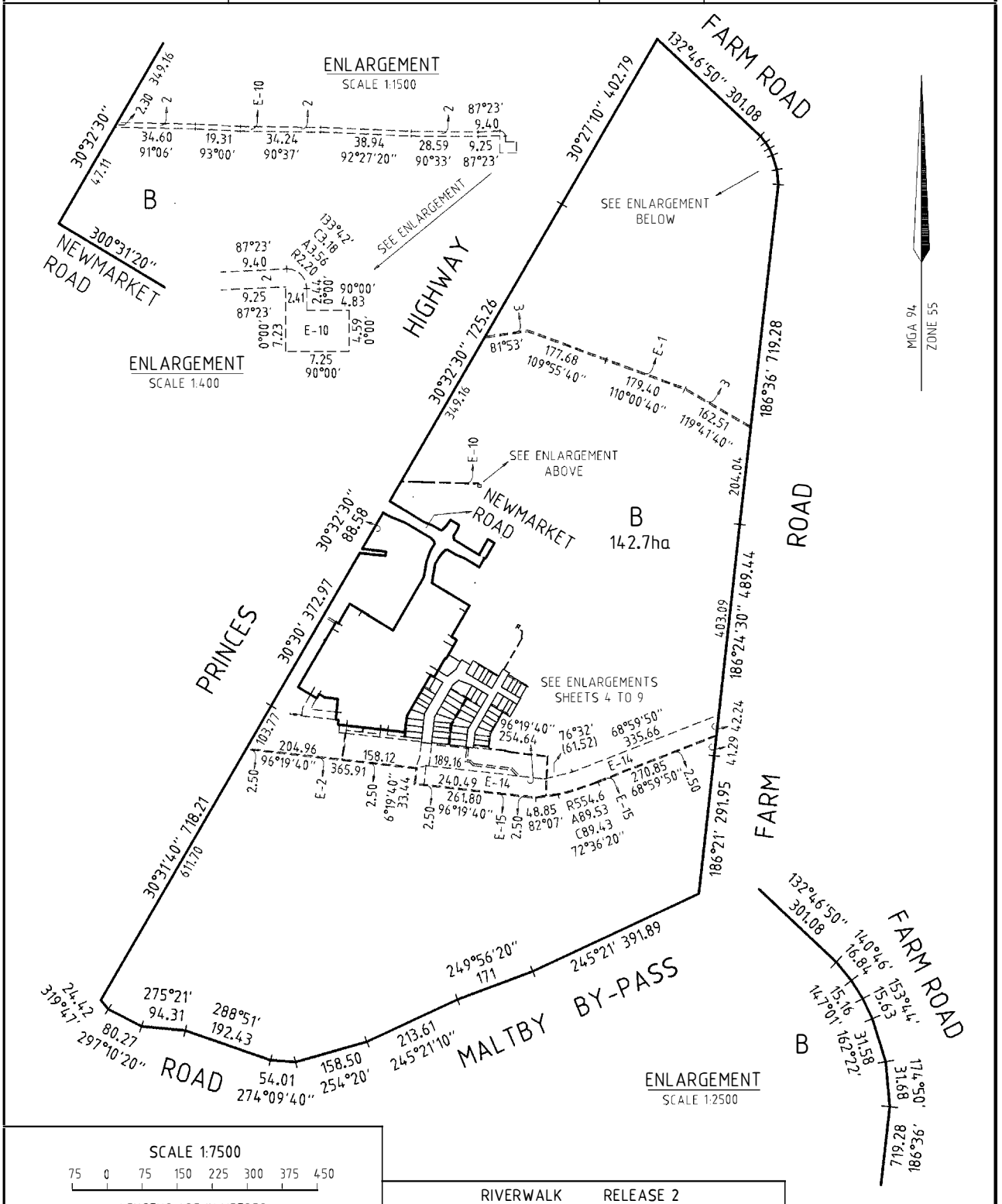
Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO .....

PLAN NUMBER **PS 636839Q**



SCALE 1:7500

75 0 75 150 225 300 375 450

LENGTHS ARE IN METRES

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 3

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LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

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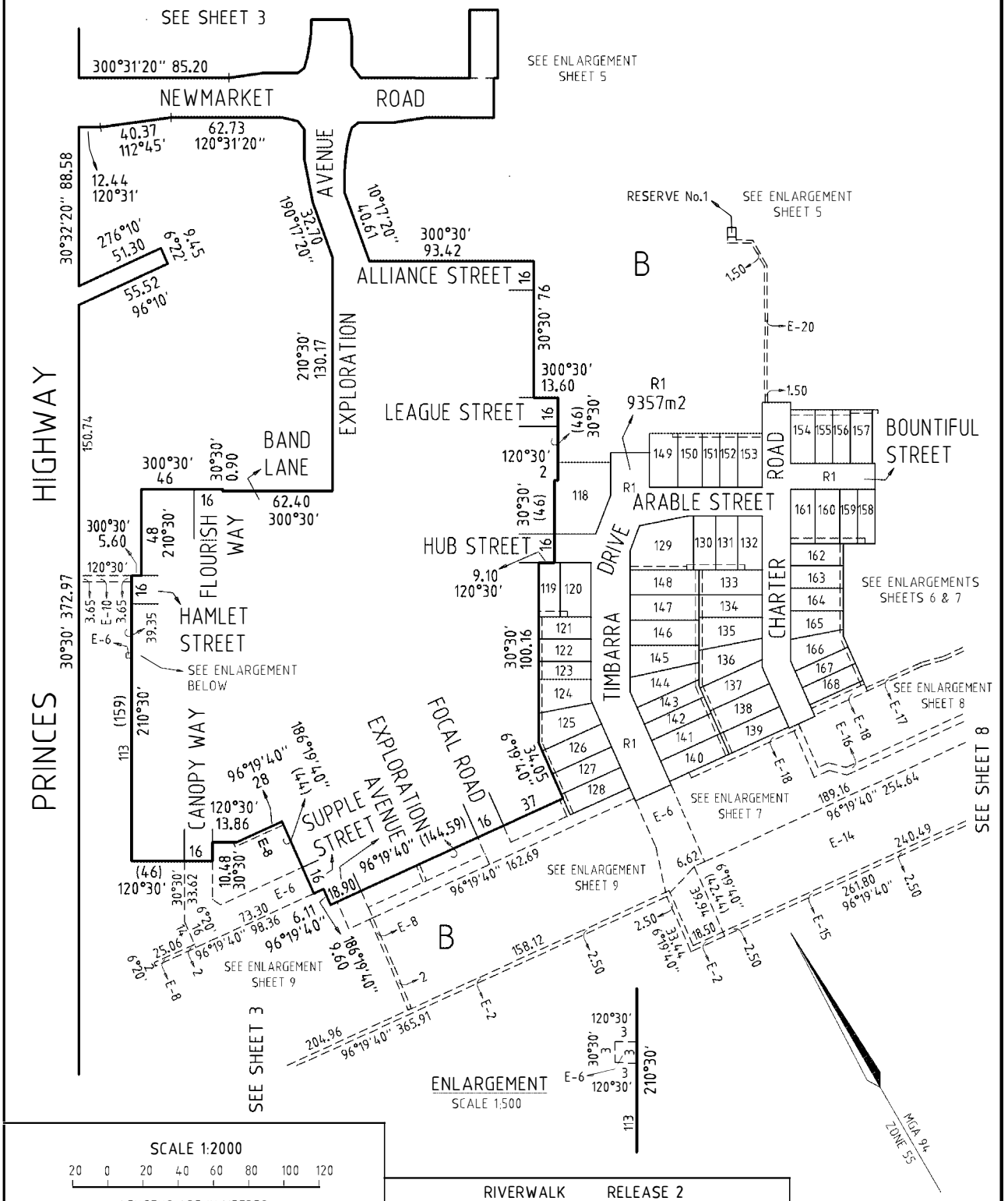
Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

PLAN OF SUBDIVISION

STAGE NO .....

PLAN NUMBER **PS 636839Q**



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 4

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LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

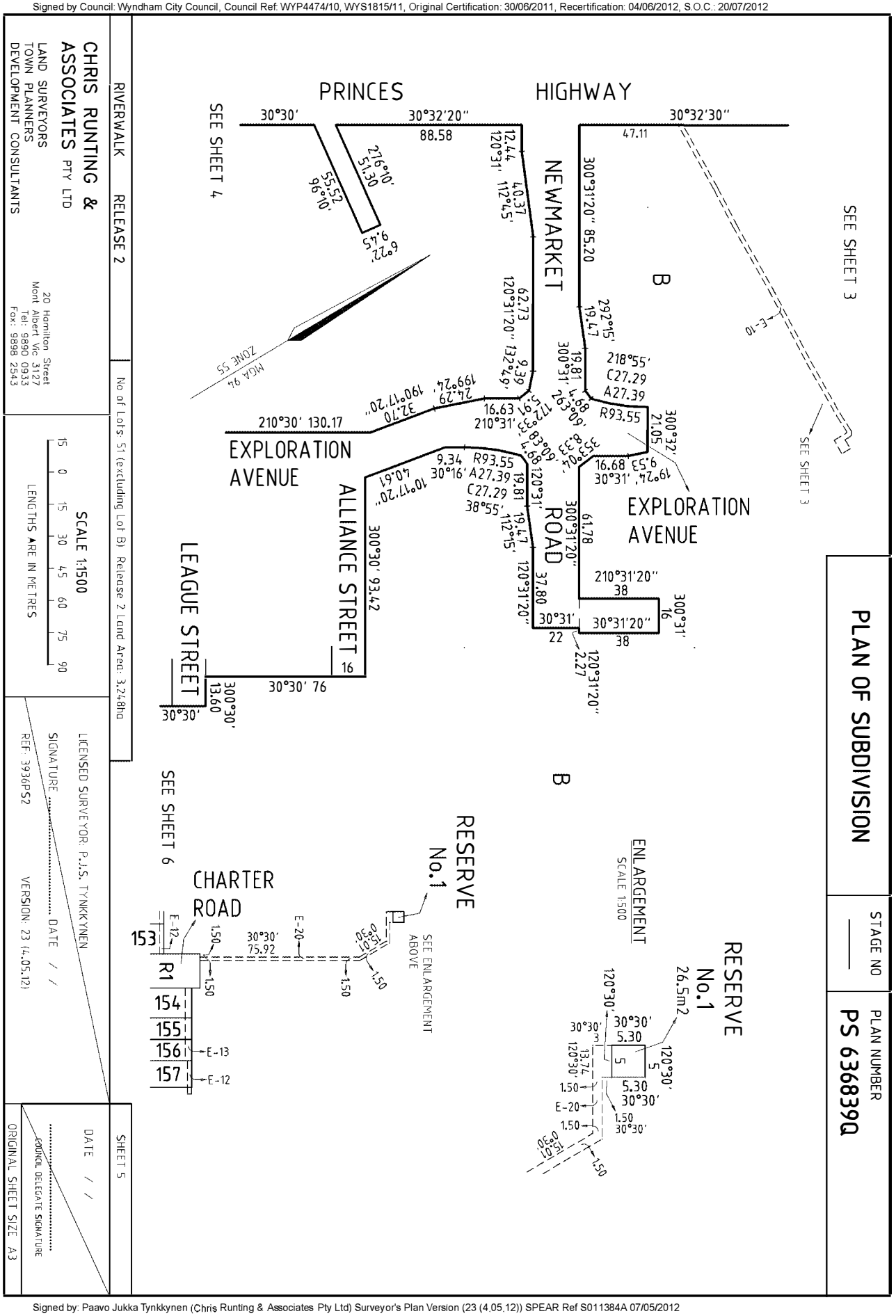
ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

PLAN OF SUBDIVISION

STAGE NO —

PLAN NUMBER PS 636839Q



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Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

RIVERWALK RELEASE 2

No of Lots 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SCALE 1:1500

15 0 15 30 45 60 75 90

LENGTHS ▲RE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2

VERSION: 23 (4.05.12)

SHEET 5

DATE / /

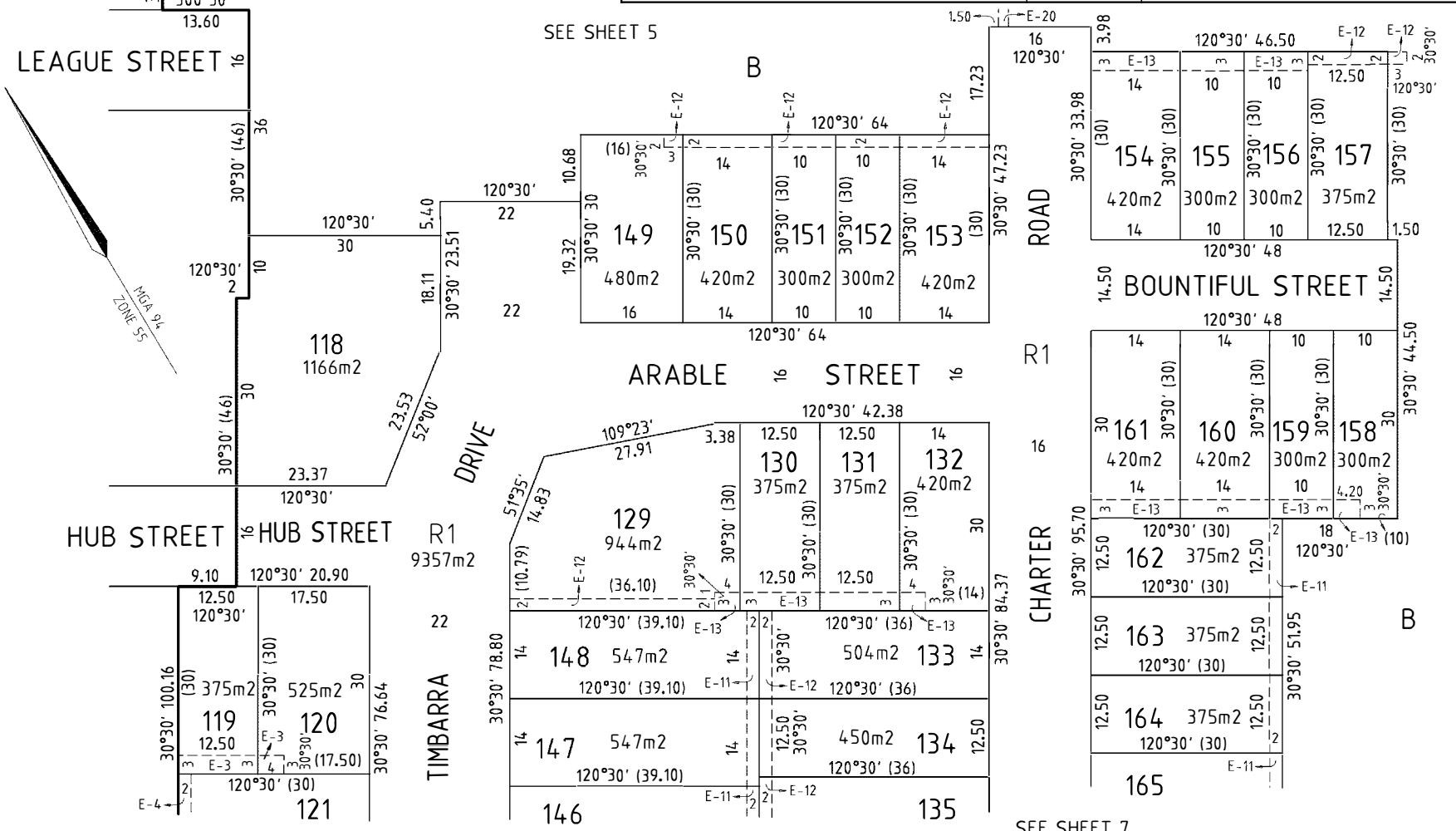
COUNCIL DELEGATE SIGNATURE .....

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO ——

PLAN NUMBER **PS 636839Q**



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 6

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LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

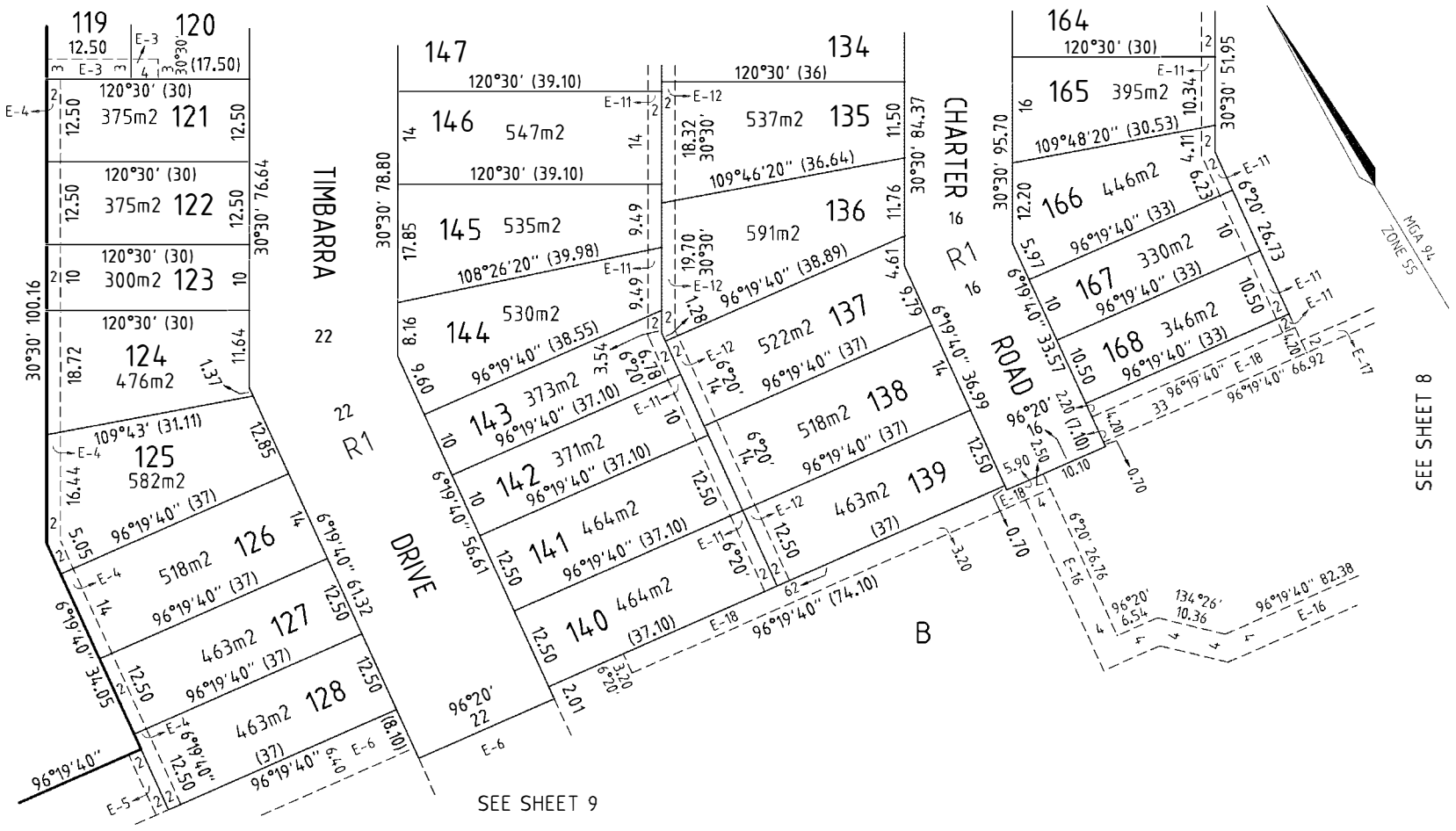
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2	No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha	SHEET 7

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

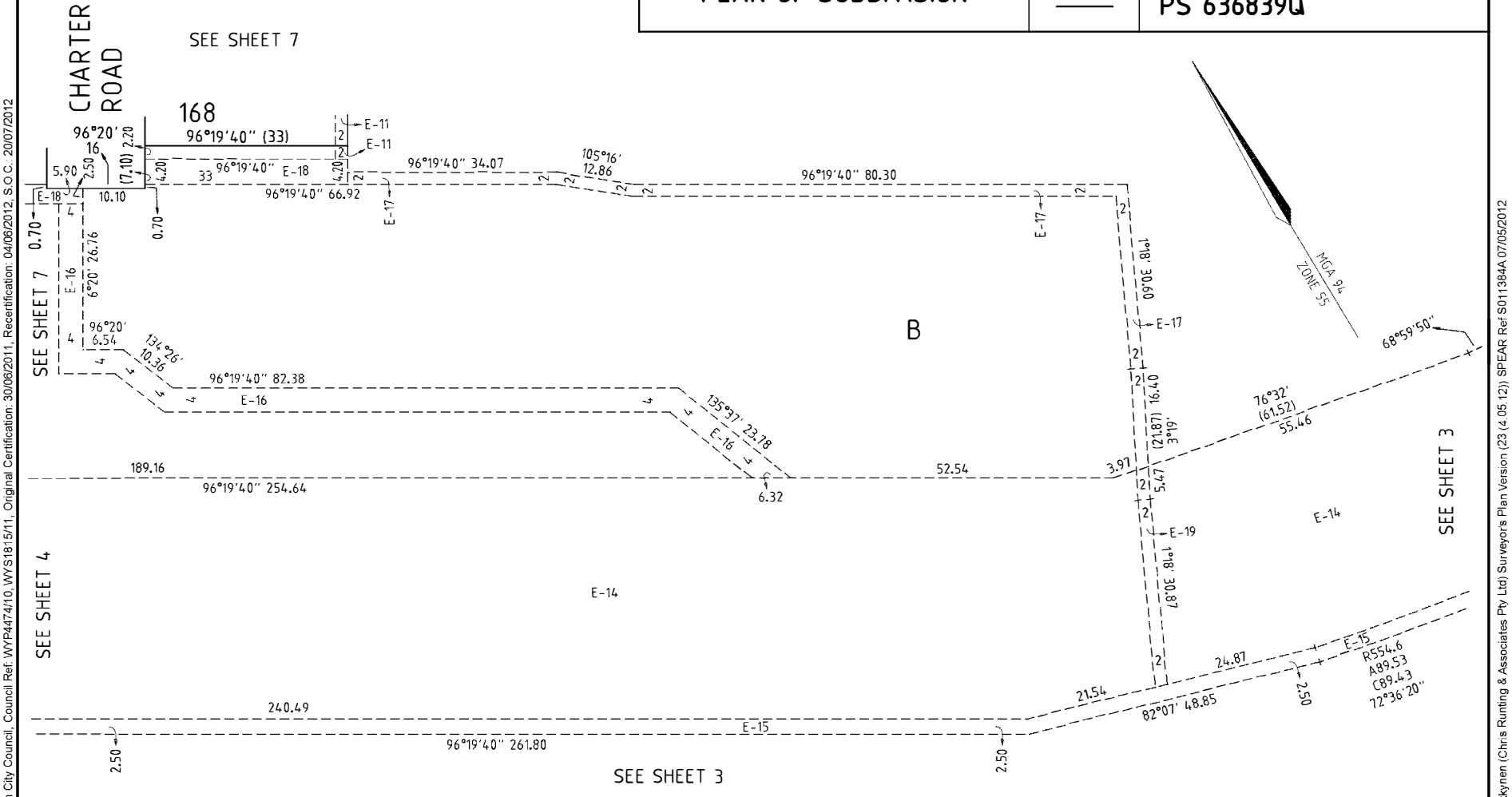
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2	No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha	SHEET 8

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:600

6 0 6 12 18 24 30 36

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

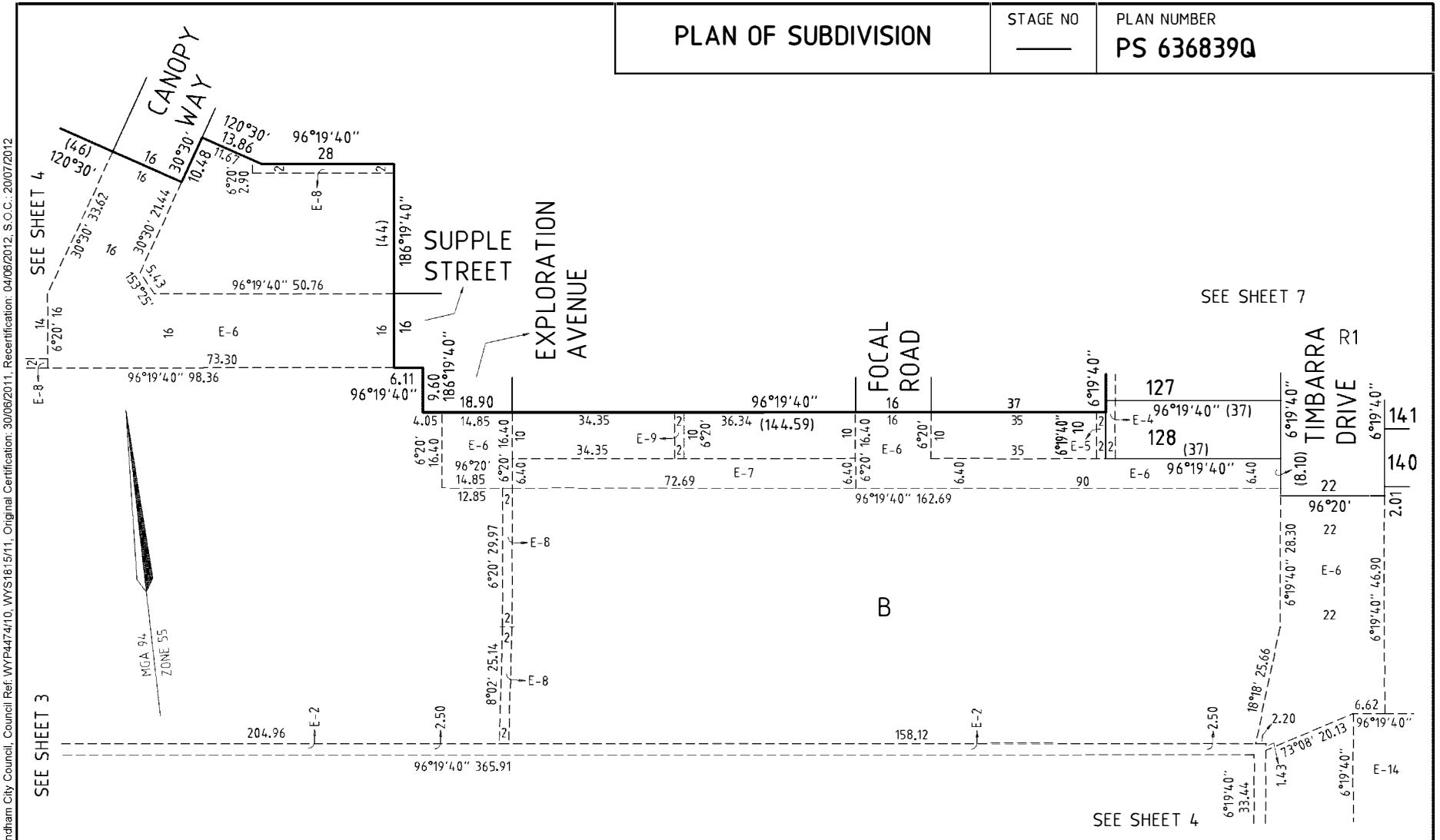
DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

PLAN OF SUBDIVISION

STAGE NO	PLAN NUMBER
——	PS 636839Q



RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B) Release 2 Land Area: 3.248ha

SHEET 9

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

SCALE 1:750

7.5 0 7.5 15 22.5 30 37.5 45

LENGTHS ARE IN METRES

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

CREATION OF RESTRICTION "A"

LAND BURDENED AND LAND BENEFITED: REFER TO TABLE 1

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of any burdened lot on this plan to which this restriction applies shall not build or permit to be built or remain on the lot any building other than a building which has been constructed in accordance with endorsed memorandum of common provisions registered in dealing no AA2033 which memorandum of common provisions is incorporated into this plan.
This restriction shall cease to have affect 10 years after the date of registration of this plan.

CREATION OF RESTRICTION "B"

LAND BURDENED AND LAND BENEFITED: REFER TO TABLE 1

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of any burdened lot must not:

B1 build or erect or permit to be built or erected or remain on the burdened lot or any part of it, any building or structure other than a building or structure which has been constructed in accordance with plans, drawings, designs and specifications which have first been approved in writing by Places Victoria ABN 61 868 774 623 in accordance with Places Victoria's Riverwalk Design Requirements and Controls as amended from time to time;

B2 erect or allow any signs to remain on the burdened lot other than the following:

- B2.1 where a dwelling constructed on the burdened lot has been completed and is offered for sale (but not if the burdened lot remains vacant or the dwelling is partly completed and is offered for sale) any real estate agent's "for sale" sign not exceeding 2.4 metres x 1.8 metres; or
- B2.2 during the period of construction of a dwelling on the burdened lot signs of builders and tradespersons who are carrying out construction work on the burdened lot;

B3 use the burdened lot or any part of it as a display home except with Places Victoria's prior written consent.

Restriction B shall cease to have affect 10 years after the date of registration of this plan.

RIVERWALK RELEASE 2
No of Lots: 51 (excluding Lot B)
Release 2 Land Area: 3.248ha

SHEET 10

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN
SIGNATURE ..... DATE / /
REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /
..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

	PLAN OF SUBDIVISION	STAGE NO	PLAN NUMBER PS 636839Q

CREATION OF RESTRICTION "C"

UPON REGISTRATION OF THIS PLAN OF SUBDIVISION THE FOLLOWING RESTRICTION IS CREATED

LAND BURDENED AND LAND BENEFITED:

LAND TO BE BURDENED:
Lots 118 to 168 (inclusive)

LAND TO BENEFIT:
Lot F on Plan of Subdivision number PS636838S

DESCRIPTION OF RESTRICTION
The registered proprietor or proprietors for the time being of a burdened lot:

1. shall not develop a burdened lot, permit a burdened lot to be developed or permit a burdened lot to remain developed, other than in accordance with the Places Victoria Fibre To The Home Building Guidelines; and
2. must not occupy a dwelling on a burdened lot and must not obtain or procure an Occupancy Permit under the Building Act 1993 (Vic) for a dwelling on a burdened lot, prior to Places Victoria issuing a Fibre To The Home compliance certificate in respect of the dwelling on the burdened lot.

This restriction applies for the period from the date of registration of this Plan of Subdivision until the date that is 10 years after the issuing of an Occupancy Permit under the Building Act 1993 (Vic) in respect of the dwelling on the burdened lot.

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B)
Release 2 Land Area: 3.248ha

SHEET 11

CHRIS RUNTING & ASSOCIATES PTY LTD
LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS
20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by Council: Wyndham City Council, Council Ref: WYP4474/10, WYS1815/11, Original Certification: 30/06/2011, Recertification: 04/06/2012, S.O.C.: 20/07/2012

	PLAN OF SUBDIVISION	STAGE NO	PLAN NUMBER
		———	PS 636839Q

TABLE 1

LAND BURDENED AND LAND BENEFITED – REFER RESTRICTIONS "A" AND "B"

CREATION OF RESTRICTION

BURDENED LOT No	BENEFITING LOTS
118	120, 129, 149
119	120, 121
120	119, 121
121	119, 120, 122
122	121, 123
123	122, 124
124	123, 125
125	124, 126
126	125, 127
127	126, 128
128	127
129	130, 148
130	129, 131, 133, 148
131	130, 132, 133
132	131, 133
133	130, 131, 132, 134, 148
134	133, 135, 147
135	134, 136, 145, 146, 147
136	135, 137, 143, 144, 145
137	136, 138, 142, 143
138	137, 139, 141, 142
139	138, 140
140	139, 141
141	138, 140, 142
142	137, 138, 141, 143
143	136, 137, 142, 144

BURDENED LOT No	BENEFITING LOTS
144	136, 143, 145
145	135, 136, 144, 146
146	135, 145, 147
147	134, 135, 146, 148
148	129, 130, 133, 147
149	150
150	149, 151
151	150, 152
152	151, 153
153	152
154	155
155	154, 156
156	155, 157
157	156
158	159
159	158, 160, 162
160	159, 161, 162
161	160, 162
162	159, 160, 161, 163
163	162, 164
164	163, 165
165	164, 166
166	165, 167
167	166, 168
168	167

RIVERWALK RELEASE 2

No of Lots: 51 (excluding Lot B)

Release 2 Land Area: 3.248ha

SHEET 12

CHRIS RUNTING & ASSOCIATES PTY LTD

LAND SURVEYORS
TOWN PLANNERS
DEVELOPMENT CONSULTANTS

20 Hamilton Street
Mont Albert Vic 3127
Tel: 9890 0933
Fax: 9898 2543

LICENSED SURVEYOR: P.J.S. TYNKKYNEN

SIGNATURE ..... DATE / /

REF: 3936PS2 VERSION: 23 (4.05.12)

DATE / /

..... COUNCIL DELEGATE SIGNATURE

ORIGINAL SHEET SIZE A3

Signed by: Paavo Jukka Tynkkynen (Chris Runting & Associates Pty Ltd) Surveyor's Plan Version (23 (4.05.12)) SPEAR Ref S011384A 07/05/2012

Plan of Subdivision PS636839Q

Certifying a New Version of an Existing Plan (Form 21)

SUBDIVISION (PROCEDURES) REGULATIONS 2000

SPEAR Reference Number: S011384A
Plan Number: PS636839Q
Responsible Authority Name: Wyndham City Council
Responsible Authority Reference Number 1: WYP4474/10
Responsible Authority Reference Number 2: WYS1815/11
Surveyor's Plan Version: 23 (4.05.12)

Certification

This plan is certified under section 11 (7) of the Subdivision Act 1988
Date of original certification under section 6: 30/06/2011
Date of previous recertifications under Section 11(7): 16/04/2012

Public Open Space

A requirement for public open space under section 18 of the Subdivision Act 1988

Has not been made

Digitally signed by Council Delegate:	Peter Van Til
Organisation:	Wyndham City Council
Date:	04/06/2012

Signed by: Peter William Van Til (Wyndham City Council) 04/06/2012

Appendix B

Area 4 – Aerial Photographs

Appendix B – Aerial Photographs

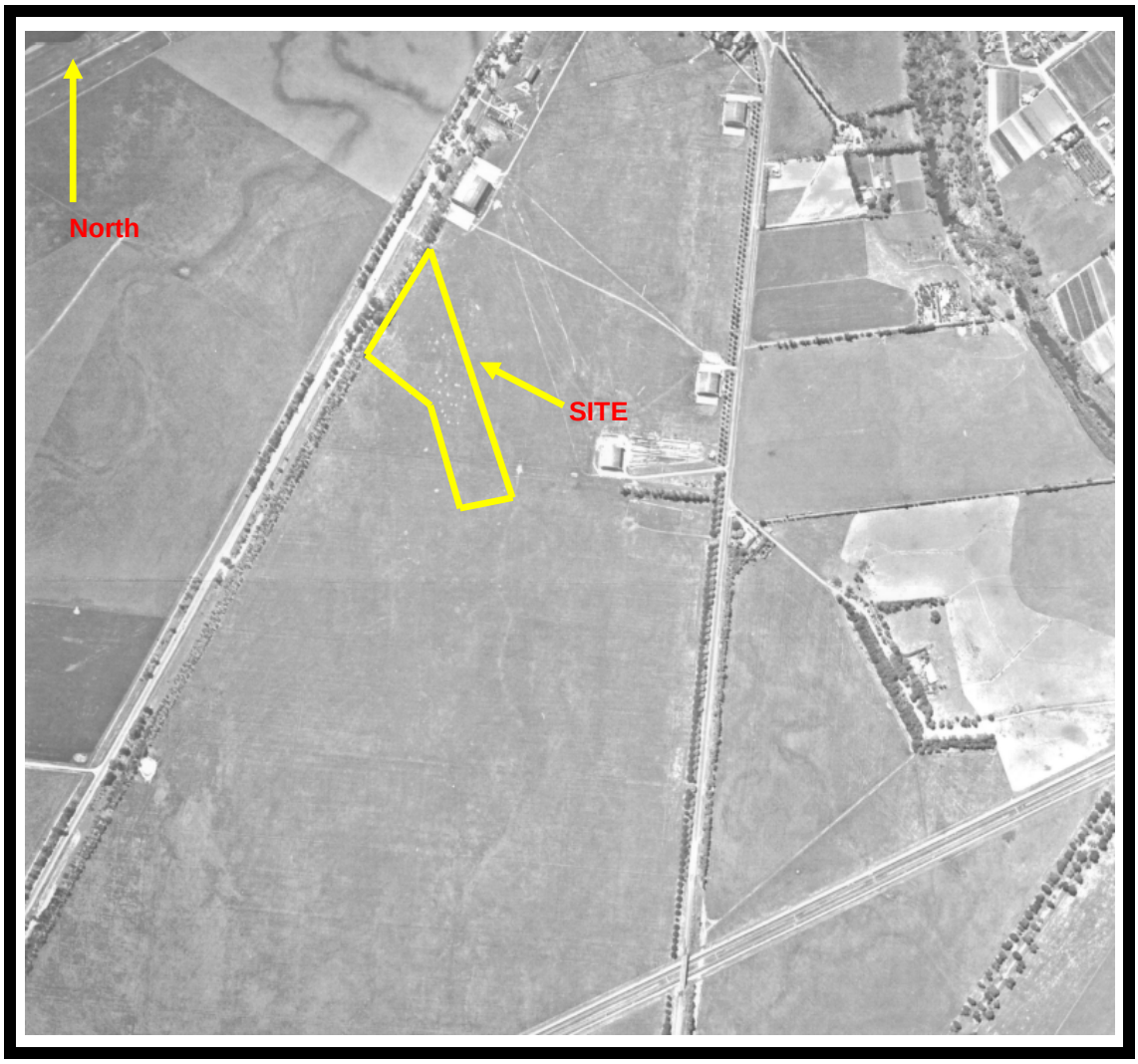


Photo 1: Aerial photograph of the Site taken in 1964. The approximate location of the Site is outlined. 08/03/1964 - run 20W. Image sourced from Department of Sustainability and Environment (DSE) – Land and Survey Information Centre.

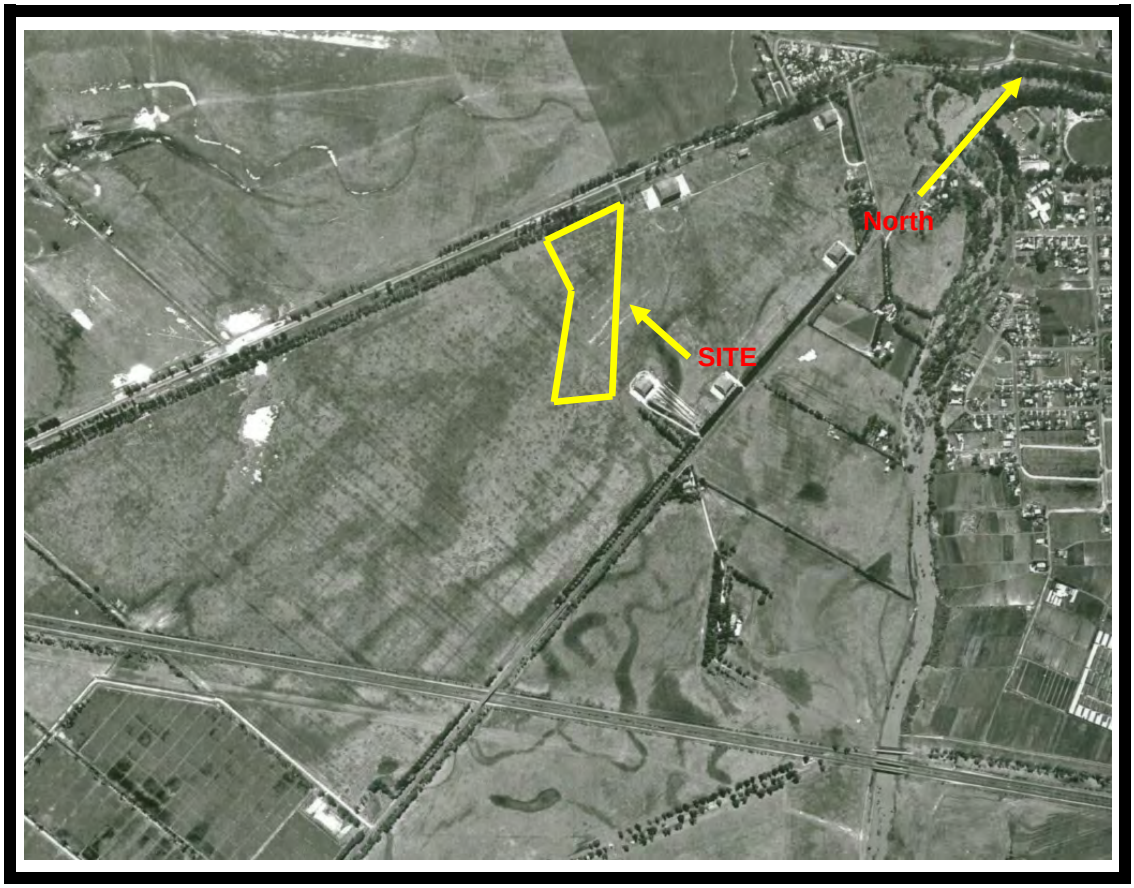


Photo 2: Aerial photograph of the Site taken in 1973. The approximate location of the Site is outlined. 1973 – run 1, photograph 19. Image sourced from Department of Sustainability and Environment (DSE) – Land and Survey Information Centre.

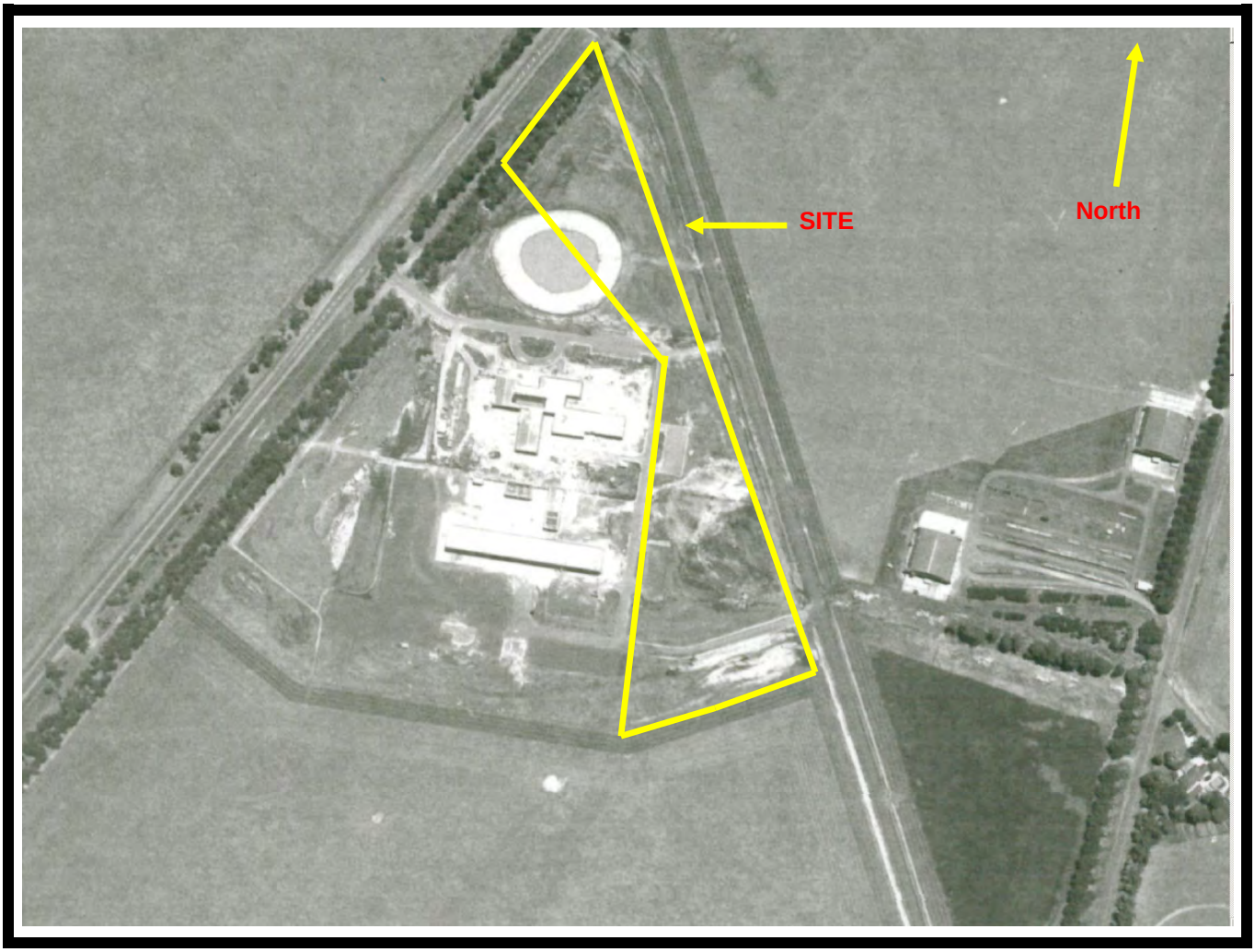


Photo 3: Aerial photograph of the Site taken in 1979. The approximate location of the Site is outlined. March, 1979 - run 12, photograph 94. Image sourced from Department of Sustainability and Environment (DSE) – Land and Survey Information Centre.

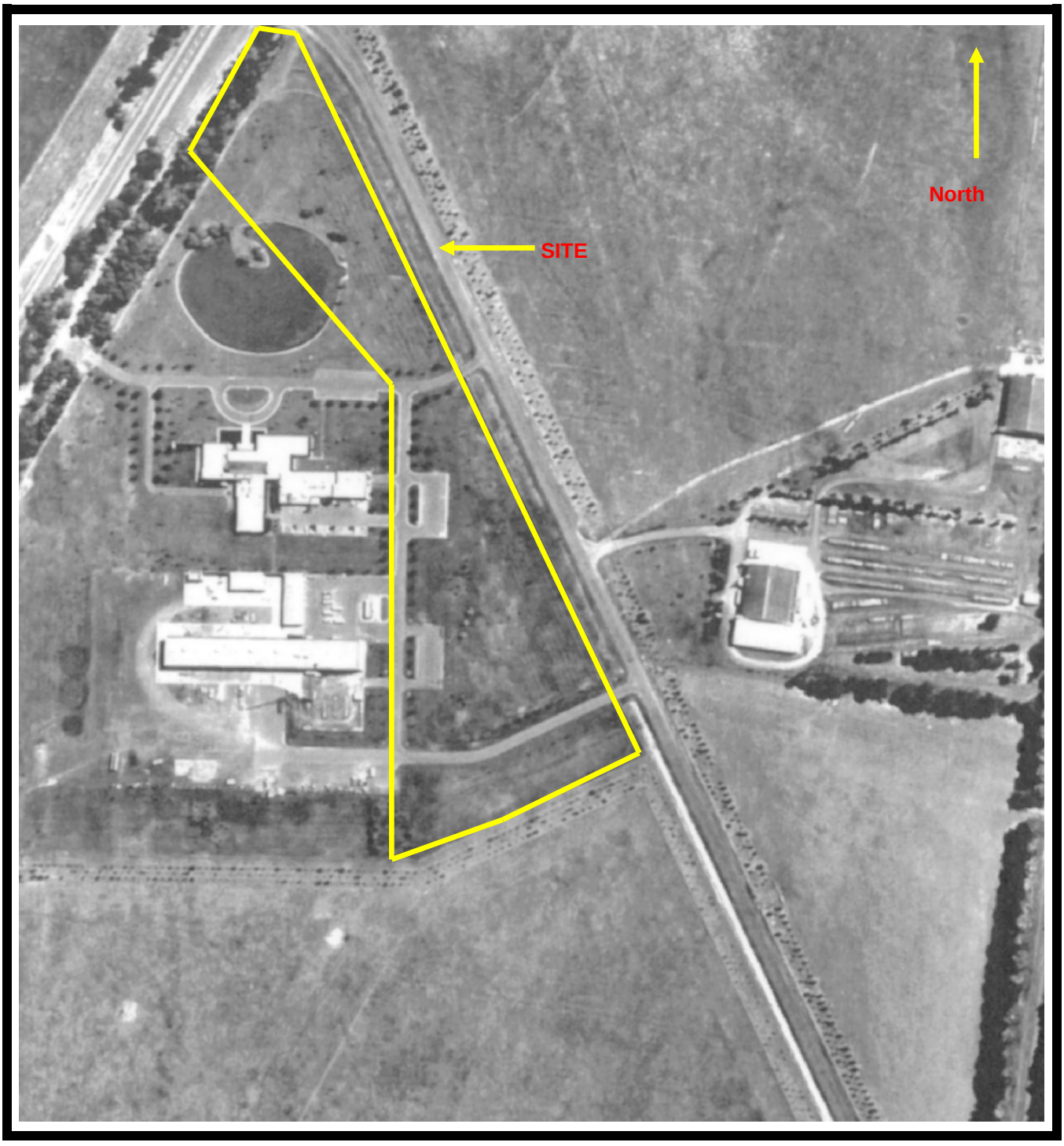


Photo 4: Aerial photograph of the Site taken in 1984. The approximate location of the Site is outlined. 1984 - run 12. Image sourced Department of Sustainability and Environment (DSE) – Land and Survey Information Centre.

Photo 5: Aerial photograph of the Site taken in 2004. The approximate location of the Site is outlined. Run 4295, photograph 89. Image sourced from Department of Sustainability and Environment (DSE) – Land and Survey Information Centre.

Appendix C

Test Pit Logs

Test Pit Log No: 4A/G1

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0	N			SILT with minor clay and sand, medium grained, very stiff, dry, low plasticity, moderate yellowish brown (ML). Carbonate nodule layer from 0.2 to 0.35m BGS.	4A/G1/0.25 4A/QS-1 4A/QS-1A
		0	N				4A/G1/0.5
		0	N				4A/G1/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Rubbish dumped in vicinity.

Template NWB

Test Pit Log No: 4A/G2

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
			N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G2/0.25
			N			SILT with minor clay, hard, dry, low plasticity, moderate yellowish brown (CL).	4A/G2/0.5
			N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G2/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour in pit.
2. Shell and sand debris observed at entrance to pit @ 0.55m.
3. Small amount of rubbish in vicinity.

Template NWB

Test Pit Log No: 4A/G3

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G3/0.25
		0.0	N			SILT with minor clay, hard, dry, low plasticity, moderate yellowish brown (CL).	4A/G3/0.5
		0.0	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G3/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Small amount of hard rubbish in vicinity.

Template NWB

Test Pit Log No: 4A/G4

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0		N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G4/0.25 4A/QS-3 4A/QS-3A
			N				4A/G4/0.5
	1		N			Test pit terminated @ 1.0mBGS.	4A/G4/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. very minor rubbish in vicinity.

Template NWB

Test Pit Log No: 4A/G5

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0	N			SILT with minor clay and minor rootlets, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G5/0.25
		0	N				4A/G5/0.5
	1	0	N				4A/G5/1.0
						Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Small amount of rubbish in vicinity.

Template NWB

Test Pit Log No: 4A/G6

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 9/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.5	N			SILTY CLAY with rootlets, soft, dry, medium plasticity, moderate brown (CL).	4A/G6/0.25
		1.3	N			SILTY CLAY with rootlets, firm, dry, medium plasticity, dark yellowish orange (CL).	4A/G6/0.5
		1.5	N			SILTY CLAY, soft, dry, low plasticity, dark yellowish orange (CL).	4A/G6/1.0
	1					Test pit terminated @ 1.0mBGS	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G7

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 9/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.3	N			SILT with minor clay, stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G7/0.25
		1.0	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G7/0.5
		0.3	N			SILT with minor clay, very stiff, slightly moist, low plasticity, dark yellowish orange (CL).	4A/G7/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Fire hydrant 20m to west of pit.

Template NWB

Test Pit Log No: 4A/G8

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 9/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.2	N			SILT with minor clay and minor rootlets, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G8/0.25
		0	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G8/0.5
	1	0.2	N			Test pit terminated @ 1.0mBGS.	4A/G8/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit or surroundings.

Template NWB

Test Pit Log No: 4A/G9

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 09/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.2	N			SILT with minor clay and minor rootlets, stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G9/0.25
		0.2	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G9/0.5
		0.4	N				4A/G9/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G10

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 9/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0	N			SILT with minor gravel, very stiff, dry, low plasticity, dark yellowish orange (CL). Minor shell grit and carbonate nodules from 0.0 to 0.25m BGS.	4A/G10/0.25
		0	N				4A/G10/0.5
	1	0	N			Test pit terminated @ 1.0mBGS.	4A/G10/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. Lake perimeter rocks nearby.
2. Pit 3m East of Peg, 2m North of lake.

Template NWB

Test Pit Log No: 4A/G11

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 9/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILT with minor clay and minor rootlets, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G11/0.25 4A/QS-4 4A/QS-4A
		0.0	N				4A/G11/0.5
	1	0.0	N			Test pit terminated @ 1.0mBGS.	4A/G11/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No debris or odour observed in pit.
2. Pit 1.5m SE of peg, lake 4m SW of pit.

Template NWB

Test Pit Log No: 4A/G12

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 9/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G12/0.25
		0.2	N				4A/G12/0.5
	1	0.0	N			Test pit terminated @ 1.0mBGS.	4A/G12/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour observed in pit.
2. small amount of shell grit in pit.
3. Sprinkler feed line running through one end of pit.

Template NWB

Test Pit Log No: 4A/G13

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 9/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.7	N			SILT with minor gravel and minor rootlets, very stiff, dry, dark yellowish orange (CL).	4A/G13/0.25
		0.6	N				4A/G13/0.5
	1	1.0	N				4A/G13/1.0
						Test pit terminated @ 1.0mBGS	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in or surrounding pit.

Template NWB

Test Pit Log No: 4A/G14

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0					SAND with shell grit (FILL). From 0.0 to 0.15m BGS.	4A/G14/0.1
		0.0	N			SILT with minor clay, very stiff, slightly moist, low plasticity, pale yellowish brown (CL).	4A/G14/0.25
		0.0	N				4A/G14/0.5
		0.0	N				4A/G14/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour observed in pit.
2. Shell grit observed in pit.
3. Rock, shell grit and sand surrounding pit.

Template NWB

Test Pit Log No: 4A/G15

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0					SAND with shell grit (FILL). From 0.0 to 0.15m BGS.	
			N			SILT with minor clay, very stiff, slightly moist, low plasticity, pale yellowish brown (CL).	4A/G15/0.25
			N				4A/G15/0.5
	1		N				4A/G15/1.0
						Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. Shell grit and sand in pit from surface fill falling in.
2. Rocks and shells surrounding pit.

Template NWB

Test Pit Log No: 4A/G16

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0		N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL). With tree+grass roots and minor carbonate nodules.	4A/G16/0.25 4A/QS-5 4A/QS-5A
			N				4A/G16/0.5
	1		N			Test pit terminated @ 1.0mBGS.	4A/G16/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit or surroundings.
2. Edge of lake 2.2m west of pit, two willow trees nearby.

Template NWB

Test Pit Log No: 4A/G17

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0		N			SILT with minor clay and sand, medium grained, very stiff, dry, low plasticity, moderate yellowish brown (ML). With many carbonate nodules.	4A/G17/0.25
			N			SILT with minor clay and sand, medium grained, very stiff, dry, low plasticity, moderate yellowish brown (SC). With minor carbonate nodules.	4A/G17/0.5
			N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (ML).	4A/G17/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris in pit, one plastic bag in pit.
2. Distinct carbonate layer from 0.25 to 0.45mBGS.

Template NWB

Test Pit Log No: 4A/G18

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 10/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0					SAND with shell grit (FILL). From 0.0 to 0.20m BGS.	
		0.0	N			SILT with minor clay and minor carbonate nodules, very stiff, slightly moist, low plasticity, pale yellowish brown (CL).	4A/G18/0.25
		0.0	N				4A/G18/0.5
						SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	
	1	0.0	N			Test Pit terminated @ 1.0mBGS.	4A/G18/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. Shell grit and sand in pit from surface fill fallin in.
2. Rocks and shells surrounding pit.

Template NWB

Test Pit Log No: 4A/G19

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.2				SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G19/0.25
		0.1					4A/G19/0.5
	1	0.2				Test pit terminated @ 1.0mBGS.	4A/G19/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in or around pit.

Template NWB

Test Pit Log No: 4A/G20

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.7				SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G20/0.25
		0.9					4A/G20/0.5
		0.9					4A/G20/1.0
	1					Test pit terminated @ 1.0mBGS	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

Template NWB

Test Pit Log No: 4A/G21

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
			N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G21/0.25
			N			SILT with minor clay, hard, dry, low plasticity, dark yellowish orange (CL).	4A/G21/0.5 4A/QS-6 4A/QS-6A
			N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G21/1.0
	1					Test pit terminated @ 1.0mBGs.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No debris or odour observed in or surrounding pit.

Template NWB

Test Pit Log No: 4A/G22

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
			N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G22/0.25
			N			SILT with minor clay, hard, dry, low plasticity, dark yellowish orange (CL).	4A/G22/0.5
			N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G22/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in or around pit.

Template NWB

Test Pit Log No: 4A/G23

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.6	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G23/0.25
		0.0	N				4A/G23/0.5
	1	0.2	N			Test pit terminated @ 1.0mBGS.	4A/G23/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit or surroundings.

Template NWB

Test Pit Log No: 4A/G24

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 15/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
			N			SILT with minor clay, stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G24/0.25
			N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G24/0.5
	1		N			Test pit terminated @ 1.0mBGS.	4A/G24/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No debris or odours observed in or surrounding pit.
2. Pit located very close to tree (2.5m).
3. Roots from tree present from 0.0 to 0.5m BGS.

Template NWB

Test Pit Log No: 4A/G25

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL)	4A/G25/0.25 4A/QS-8 4A/QS-8A
		0	N			SILT with minor clay, hard, dry, low plasticity, dark yellowish orange (CL).	4A/G25/0.5
		0	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G25/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in or surrounding pit.
2. Underground lines surrounding pit.

Template NWB

Test Pit Log No: 4A/G26

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 15/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.8	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G26/0.25
		0.3	N			SILT with minor clay, hard, dry, low plasticity, moderate yellowish brown (CL).	4A/G26/0.5 4A/QS-7 4A/QS-7A
		0.6	N			SILT with minor clay, very stiff, dry, low plasticity (CL).	4A/G26/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris in or surrounding pit.
2. Pit adjacent to road and stormwaterd drain.

Template NWB

Test Pit Log No: 4A/G27

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILTY CLAY, stiff, dry, medium plasticity, dark yellowish orange (CL).	4A/G27/0.25
		0.0	N			SILTY CLAY, very stiff, dry, medium plasticity, greyish orange (CL).	4A/G27/0.5
		0.0	N			SILTY CLAY, hard, dry, medium plasticity, moderate yellowish brown (CL).	4A/G27/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G28

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILTY CLAY, stiff, dry, medium plasticity, dark yellowish orange (CL).	4A/G28/0.25
		0.0	N			SILTY CLAY, hard, dry, medium plasticity, moderate yellowish brown (CL).	4A/G28/0.5
	1	0.0	N			CLAYEY SILT, firm, dry, low plasticity, dark yellowish orange (ML). Test pit terminated @ 1.0mBGS.	4A/G28/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G29

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.1	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G29/0.25
		0.0	N				4A/G29/0.5
	1	0.0	N			Test pit terminated @ 1.0mBGS.	4A/G29/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour in pit.
2. Pit located adjacent to car park and operations entrance.

Template NWB

Test Pit Log No: 4A/G30

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
			N			SILT with minor clay, stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G30/0.25
			N				4A/G30/0.5
	1		N			Test pit terminated @ 1.0mBGS.	4A/G30/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in or around pit.
2. Pit location offset 2m to east of location in carpark.

Template NWB

Test Pit Log No: 4A/G31

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.4	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G31/0.25
		1.4	N				4A/G31/0.5
		1.8	N				4A/G31/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in or surrounding pit.

Template NWB

Test Pit Log No: 4A/G32

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G32/0.25
		0.2	N				4A/G32/0.5
	1	0.0	N			Test pit terminated @ 1.0mBGS.	4A/G32/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

Template NWB

Test Pit Log No: 4A/G33

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: CNB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0					SILTY CLAY, stiff, dry, medium plasticity, dark yellowish orange (CL).	
		0.0	N				4A/G33/0.25
						SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	
		0.0	N				4A/G33/0.5
		0.0	N				4A/G33/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G34

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: CNB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILTY CLAY, stiff, dry, medium plasticity, dark yellowish orange (CL).	4A/G34/0.25
		0.0	N				4A/G34/0.5
						SILTY CLAY, very stiff, dry, medium plasticity, moderate yellowish brown (CL).	
		0.0	N				4A/G34/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G35

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILTY CLAY with rootlets, stiff, dry, medium plasticity, dark yellowish orange (CL).	4A/G35/0.25
		0.0	N			SILTY CLAY, stiff, dry, medium plasticity, greyish orange (CL).	4A/G35/0.5
		0.0	N			SILTY CLAY, stiff, dry, medium plasticity, moderate yellowish brown (CL).	4A/G35/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. 50mm PVC pipe @ 0.4m

Template NWB

Test Pit Log No: 4A/G36

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
			N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G36/0.25
			N				4A/G36/0.5
	1		N			Test pit terminated @ 1.0mBGS.	4A/G36/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Pit located on edge of carpark.
3. Irrigation pipe at 0.3m BGS.

Template NWB

Test Pit Log No: 4A/G37

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: CNB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILTY CLAY, stiff, dry, medium plasticity, dark yellowish orange (CL).	4A/G37/0.25
		0.0	N			SILTY CLAY, stiff, dry, medium plasticity, greyish orange (CL).	4A/G37/0.5
						SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	
		0.0	N				4A/G37/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1.No odour or observed debris.

Template NWB

Test Pit Log No: 4A/G38

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
			N			SILT with minor clay and rootlets, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G38/0.25
			N				4A/G38/0.5
						SILT with minor clay, hard, dry, low plasticity, moderate yellowish orange (CL).	
			N				4A/G38/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G39

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 14/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G39/0.25
		0.3	N				4A/G39/0.5
	1	0.2	N				4A/G39/1.0
						Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in or around pit.
2. Pit opposite entrance to hanger area 4B.

Template NWB

Test Pit Log No: 4A/G40

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0					GRAVEL, coarse grained, dry, grey. (GW)	
		0.0	N			CLAYEY SILT, firm, dry, medium plasticity, pale yellowish brown (ML).	4A/G40/0.25
		0.1	N			CLAYEY SILT, very stiff, dry, medium plasticity, moderate yellowish brown (ML).	4A/G40/0.5
		0.1	N			CLAYEY SILT, very stiff, dry, medium plasticity, light brown (ML).	4A/G40/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour observed in pit.
2. Road base to 0.1mBGS.

Template NWB

Test Pit Log No: 4A/G41

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 08/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0	0.1	N			GRAVEL, coarse grained, dry, grey (GW).	4A/G41/0.1
		0.4	N			CLAYEY SILT with minor rootlets, very stiff, dry, low plasticity, dark yellowish orange (ML).	4A/G41/0.25
						CLAYEY SILT, stiff, dry, low plasticity, light brown (ML).	
		0.1	N				4A/G41/0.5
						CLAYEY SILT, firm, dry, low plasticity, light brown (ML).	
		0.0	N				4A/G41/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour observed in pit.
2. 20mm crushed rock (road base) to 0.1mBGS.

Template NWB

Test Pit Log No: 4A/G42

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.1	N			SILTY CLAY, soft, dry, medium plasticity, dark yellowish orange (CL).	4A/G42/0.25
		0.2	N			SILTY CLAY, firm, dry, medium plasticity, greyish orange (CL).	4A/G42/0.5
						SILTY CLAY, stiff, dry, low plasticity, dark yellowish orange (CL).	
		0.0	N				4A/G42/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit, small quantity of scattered detritus in area.

Template NWB

Test Pit Log No: 4A/G43

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0					SILTY CLAY, soft, dry, medium plasticity, dark yellowish orange (CL).	
		0.6	N				4A/G43/0.25
						SILTY CLAY, firm, dry, low plasticity, greyish orange (CL).	
		0.9	N				4A/G43/0.5
		0.7	N			SILTY CLAY, firm, dry, low plasticity, dark yellowish orange (CL).	4A/G43/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. 50mm PVC pipe @ 0.3mBGS.

Template NWB

Test Pit Log No: 4A/G44

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/04/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.9	N			SILTY CLAY with rootlets, stiff, dry, medium plasticity, dark yellowish orange (CL).	4A/G44/0.25
		1.5	N			SILTY CLAY with rootlets, very stiff, dry, medium plasticity, moderate yellowish brown (CL).	4A/G44/0.5
		1.6	N			SILTY CLAY, firm, dry, low plasticity, moderate yellowish brown (CL).	4A/G44/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G45

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 9/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.3	N			ROAD BASE, dry, dusky yellowish brown (FILL).	4A/G45/0.25
		1.8	N				4A/G45/0.5
						SILT with minor clay, firm, slightly moist, low to medium plasticity, dark yellowish orange (CL).	
		1.1	N				4A/G45/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Surrounding area is a gravel carpark bordered by a bitumen paved carpark.

Template NWB

Test Pit Log No: 4A/G46

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.2	N			SILT with minor clay, very stiff, dry, moderate yellowish brown (CL).	4A/G46/0.25
		0.4	N			SILT with minor clay, stiff, dry, dark yellowish orange (CL).	4A/G46/0.5
	1	0.2	N			SILT with minor clay, stiff, slightly moist, dark yellowish orange (CL).	4A/G46/1.0
						Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Adjacent to area where gravel fro road base had been piled.

Template NWB

Test Pit Log No: 4A/G47

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILT with minor clay and rootlets, stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G47/0.25
		0.0	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G47/0.5
		0.0	N			SILT with minor clay, stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G4/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in or around pit.
2. Harder and slightly darker layer between 0.28 and 0.65mBGS.

Template NWB

Test Pit Log No: 4A/G48

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.1	N			SILT with minor clay and very minor rootlets, very stiff, dry, low plasticity, moderate yellowish brown (CL).	4A/G48/0.25
		0.1	N			SILT with minor clay, stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G48/0.5
		0.0	N				4A/G48/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit or surroundings.
2. LIght brown colour from 0.0 to 0.2m BGS and 0.4 tp 1.0m BGS.

Template NWB

Test Pit Log No: 4A/G49

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.4	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G49/0.25
		0.7	N			SILT with minor clay, very stiff, slightly moist, low plasticity, dark yellowish orange (CL).	4A/G49/0.5
		0.7	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G49/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit or surroundings.

Template NWB

Test Pit Log No: 4A/G50

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 7/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.6	N			SILT with minor clay and very minor rootlets, firm, dry, low plasticity, dark yellowish orange (CL).	4A/G50/0.25
		0.7	N				4A/G50/0.5
		0.3	N				4A/G50/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No debris or odour in pit, minor debris in surroundings.

Template NWB

Test Pit Log No: 4A/G51

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 7/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.3	N			SILT with minor clay and minor rootlets, firm, dry, low plasticity, dark yellowish orange (CL).	4A/G51/0.25
		1.5	N				4A/G51/0.5
		1.0	N				4A/G51/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No debris or odour in pit, minor debris in surroundings.

Template NWB

Test Pit Log No: 4A/G52

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 7/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0		N			SILT with minor clay and very minor rootlets, firm, dry, low plastcity, dark yellowish orange (CL).	4A/G52/0.25
			N				4A/G52/0.5
	1		N				4A/G52/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris in pit, minimal debris in vicinity.

Template NWB

Test Pit Log No: 4A/G53

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.0	N			SILT with minor clay, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G53/0.25
		1.3	N				4A/G53/0.5
	1		N				4A/G53/1.0
						Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G54

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.0				SILT with minor clay, very stiff, dry, moderate yellowish brown (CL).	4A/G54/0.25
		1.5				SILT with minor clay, very stiff, dry, moderate yellowish orange (CL).	4A/G54/0.5
		1.7					4A/G54/1.0
	1					Test pit abandoned @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Sprinkler 3m to south of pit.

Template NWB

Test Pit Log No: 4A/G55

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 8/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.0	N			SILT with minor clay and rootlets, very stiff, dry, low plasticity, dark yellowish orange (CL).	4A/G55/0.25
		1.0	N				4A/G55/0.5
		1.2	N				4A/G55/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit or surrounding pit.

Template NWB

Test Pit Log No: 4A/G56

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 15/04/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILT with minor clay and rootlets, stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G56/0.25
		0.0	N			SILT with minor clay, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/G56/0.5
		0.0	N				4A/G56/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No debris or odour observed in or surrounding pit.

Template NWB

Test Pit Log No:4A/G57

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 15/4/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILTY CLAY, stiff, dry, medium plasticity, dark yellowish orange (CL).	4A/G57/0.25
		0.0	N			SILTY CLAY, hard, dry, medium plasticity, moderate yellowish brown (CL).	4A/G57/0.5
	1	0.0	N			Test pit terminated @ 1.0mBGS.	4A/G57/1.0
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G58

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 15/4/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.0	N			SILTY CLAY with rootlets, stiff, dry, medium plasticity, greyish orange (CL).	4A/G58/0.25
		0.0	N			SILTY CLAY, hard, dry, medium plasticity, light brown (CL).	4A/G58/0.5
		0.0	N			SILTY CLAY, hard, dry, low plasticity, dark yellowish orange (CL).	4A/G58/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G59

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/4/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.2	N			SILTY CLAY with rootlets, firm, dry, medium plasticity, dark yellowish orange (CL).	4A/G59/0.25
						SILTY CLAY, soft, dry, low plasticity, dark yellowish orange (CL).	4A/QS-11 4A/QS-11A
		1.1	N				4A/G59/0.5
						CLAYEY SILT with carbonate nodules, very soft, dry, low plasticity, dark yellowish orange (ML).	
		1.2	N				4A/G59/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G60

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/4/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		1.0	N			SILTY CLAY with rootlets, firm, dry, medium plasticity, dark yellowish orange (CL).	4A/G60/0.25
		1.2	N			SILTY CLAY, soft, dry, low plasticity, dark yellowish orange (CL).	4A/G60/0.5
		0.9	N			CLAYEY SILT, very soft, dry, low plasticity, dark yellowish orange (ML).	4A/G60/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G61

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/4/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.1	N			SILTY CLAY with rootlets, firm, dry, medium plasticity, light brown (CL).	4A/G61/0.25
		0.1	N			SILTY CLAY, soft, dry, low plasticity, dark yellowish orange (CL).	4A/G61/0.5
		0.3	N			CLAYEY SILT, very soft, dry, low plasticity, dark yellowish orange (ML).	4A/G61/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/G62

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 11/4/08
Drill Rig: Backhoe
Logged By: TSA

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.1	N			SILTY CLAY with rootlets, stiff, dry, medium plasticity, dark yellowish orange (CL).	4A/G62/0.25
		0.8	N				4A/G62/0.5
						SILTY CLAY, soft, dry, low plasticity, dark yellowish orange (CL).	
		1.0	N				4A/G62/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 1.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/T5

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 17/4/08
Drill Rig: Backhoe
Logged By: EJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Hydrocarbon Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0	N			CLAYEY SAND, stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/T5/0.25
		1.2	N			CLAYEY SAND, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/T5/0.5
		1.3	N			CLAYEY SAND, very stiff, dry, low plasticity, moderate yellowish orange (CL).	4A/T5/1.0
	1					CLAYEY SAND, stiff, dry, low plasticity, moderate yellowish orange (CL).	
		1.3	N				4A/T5/2.0
	2					Test pit terminated @ 2.0mBGS.	

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation:
Total Depth: 2.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

HYDROCARBON ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.
2. Pit located adjacent to septic system.

Template NWB

Test Pit Log No: 4A/T1A

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 16/02/09
Drill Rig: Backhoe
Logged By: KJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.1	N			SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	4A/T1A/0.25
		0.4	N			SILTY CLAY, hard, dry, medium plasticity, moderate yellowish orange (CL).	4A/T1A/0.5
						CLAYEY SAND, fine, very stiff, dry, low plasticity, greyish orange (SC).	
	1	0.4	N				4A/T1A/1.0
						SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	
	2	0.2	N				4A/T1A/2.0
						Test pit terminated @ 2.0mBGS.	

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 2.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/T1B

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 13/02/09
Drill Rig: Backhoe
Logged By: KJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.8	N			SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	4A/T1B/0.25
		0.2	N			SILTY CLAY, hard, dry, medium plasticity, greyish orange (CL).	4A/T1B/0.5 4A/QS-12 4A/QS-12a
		0.2	N			SILTY CLAY, hard, dry, medium plasticity, pale yellowish orange (CL).	4A/T1B/1.0
	1						
		0.1	N			SILTY CLAY, very stiff, slightly moist, medium plasticity, pale yellowish orange (CL).	4A/T1B/2.0
	2					Test pit terminated @ 2.0mBGS.	

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 2.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed.

Template NWB

Test Pit Log No: 4A/T2A

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 16/02/09
Drill Rig: Backhoe
Logged By: KJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.1	N			SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	4A/T2A/0.25
		0.2	N			SILTY CLAY, hard, dry, medium plasticity, moderate yellowish brown (CL). Tree roots encountered.	4A/T2A/0.5
						CLAYEY SAND, fine, very stiff, dry, low plasticity, greyish orange (SC).	
	1	0.4	N				4A/T2A/1.0
						Test pit terminated @ 1.1mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 2.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/T2B

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 13/02/09
Drill Rig: Backhoe
Logged By: KJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.6	N			SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	4A/T2B/0.25
		0.1	N			SILTY CLAY, hard, dry, medium plasticity, greyish orange (CL). Tree roots encountered.	4A/T2B/0.5
		0.1	N			SILTY CLAY, very stiff, dry, medium plasticity, pale yellowish orange (SC). With minor carbonate nodules.	4A/T2B/1.0
	1					Test pit terminated @ 1.0mBGS.	
	2						

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 2.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/T3A

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 16/02/09
Drill Rig: Backhoe
Logged By: KJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0						
		0.4	N			SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	4A/T3A/0.25
		0.2	N			SILTY CLAY, hard, dry, medium plasticity, moderate yellowish brown (CL).	4A/T3A/0.5
	1	0.1	N			SILTY CLAY with minor sand, fine, very stiff, dry, medium plasticity, greyish orange (CL).	4A/T3A/1.0
						SILTY CLAY with minor sand, fine, very stiff, slightly moist, medium plasticity, greyish orange (CL). With minor carbonate nodules.	
	2	0.1	N				4A/T3A/2.0
						Test pit terminated @ 2.0mBGS.	

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 2.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

ODOUR

S - Strong
M - Medium
L - Low
N - None

FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Test Pit Log No: 4A/T3B

Project: Werribee Area 4
Project Number: 3106004
Location: New Farm Rd, Werribee

Date: 13/02/09
Drill Rig: Backhoe
Logged By: KJB

OTEK AUSTRALIA PTY LTD

Water Level	Depth (metres)	PID Reading (ppm)	Odour	Sample Type	Graphic Symbol	MATERIAL DESCRIPTION (Unified Soil Classification System)	Sample I.D.
	0		N			SILTY CLAY, hard, dry, medium plasticity, dark yellowish orange (CL).	4A/T3B/0.25
			N			SILTY CLAY, hard, dry, medium plasticity, moderate yellowish brown (CL).	4A/T3B/0.5
	1		N			SILTY CLAY, hard, dry, medium plasticity, greyish orange (CL). With minor carbonate nodules.	4A/T3B/1.0
	2		N			SILTY CLAY, hard, dry, medium plasticity, greyish orange (CL).	4A/T3B/2.0
						Test pit terminated @ 2.0mBGS.	

BORE DATA

Disturbed Sample | Undisturbed Sample

Surface Elevation: 0
Total Depth: 2.0m
Diameter:
Bore Advancement Method:
Bore Abandonment Method: Backfill with cuttings and compact.

ANALYTICAL TESTING

ODOUR

S - Strong
M - Medium
L - Low
N - None

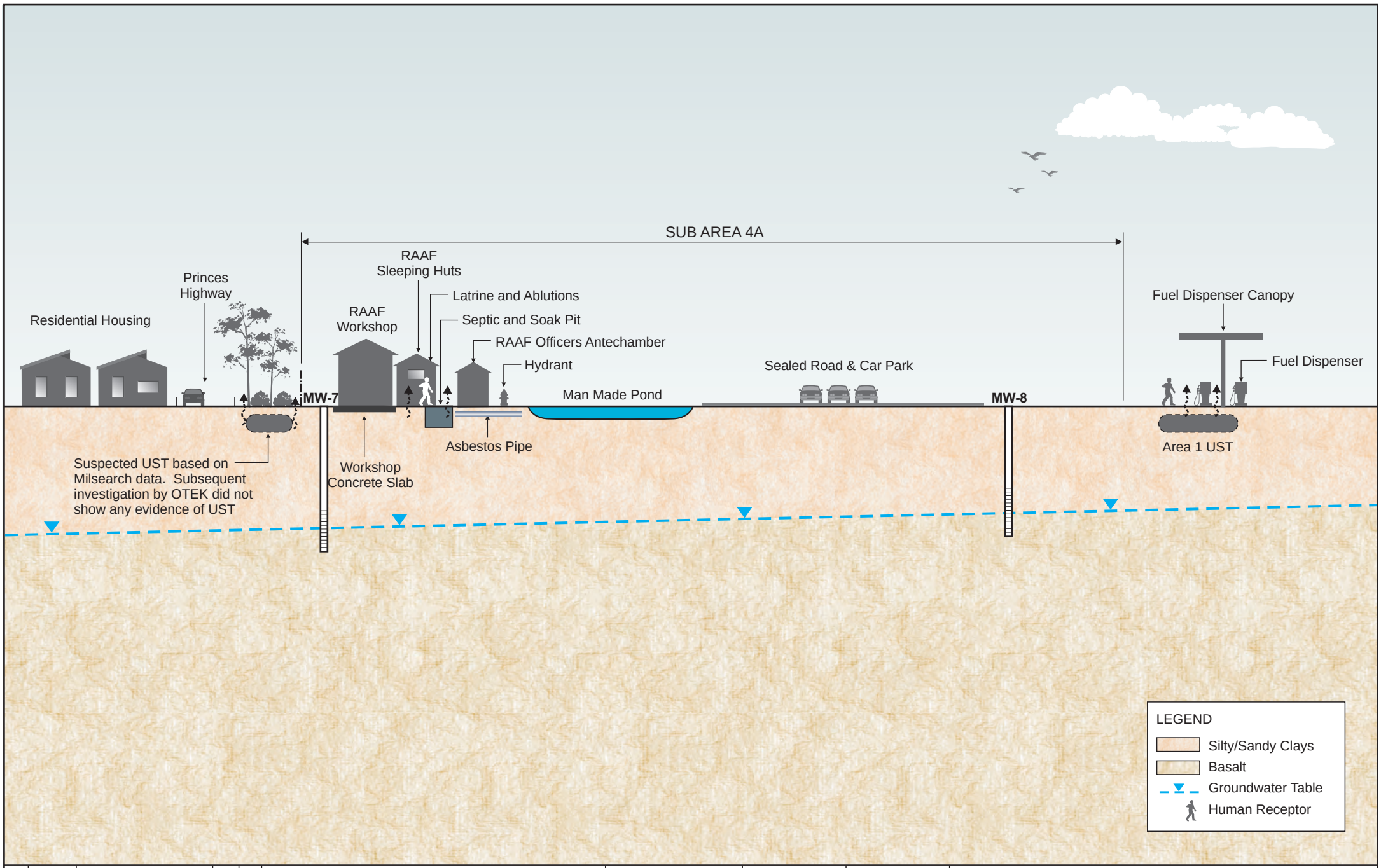
FOOTNOTES

1. No odour or debris observed in pit.

Template NWB

Appendix D

Conceptual Site Model



ISSUE	DATE	AMENDMENTS	DRAWN	CKD
01	02.05.12	ORIGINAL ISSUE	BW	LD

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PERTH TEL (08) 9227 9000 FAX (08) 9227 9009
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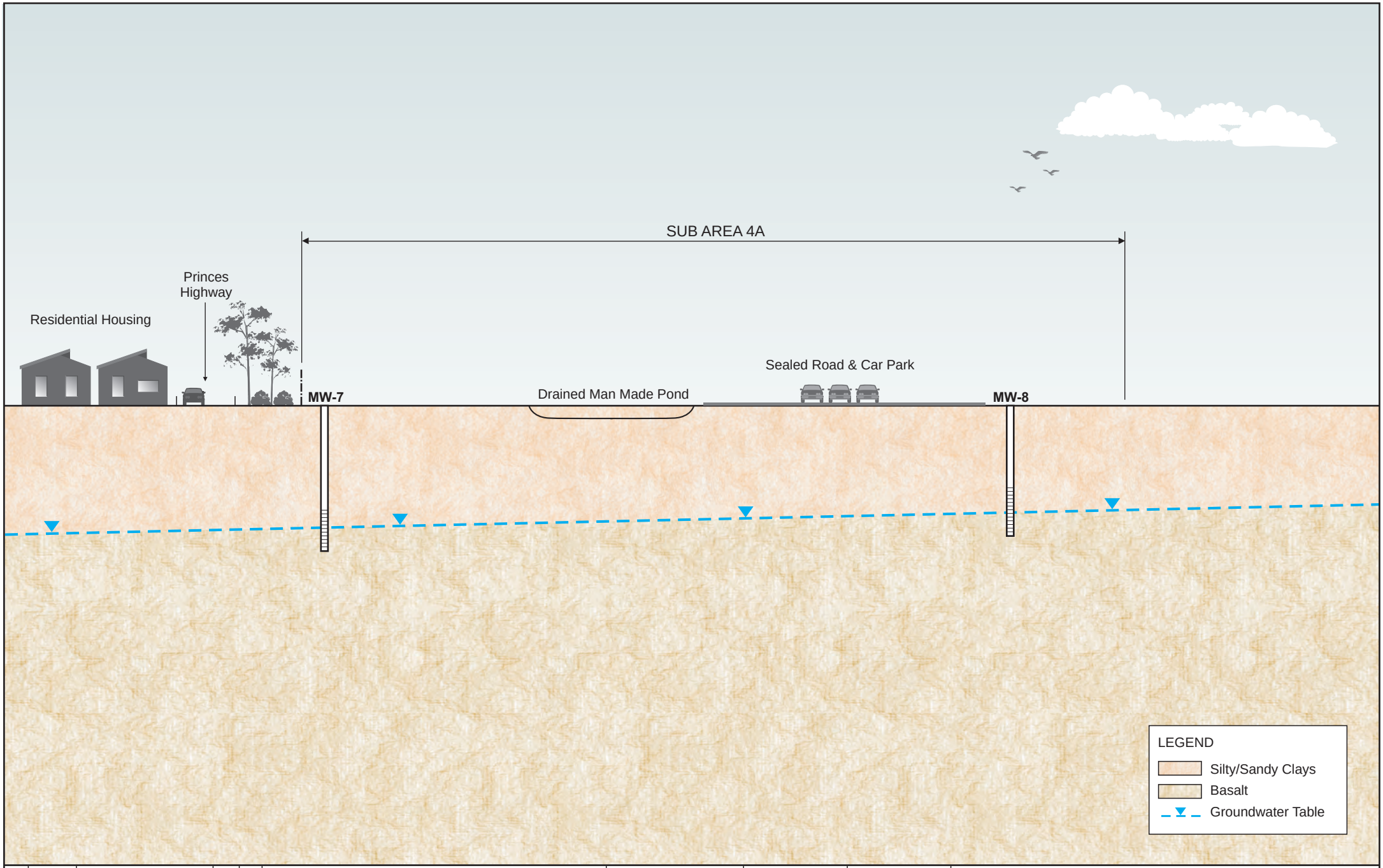
CONCEPTUAL SITE MODEL - HISTORICAL POTENTIAL SOURCES

WERRIBEE RIVERWALK, SUB-AREA 4A, MELBOURNE WATER, VICTORIA

SHEET SIZE:	DRAWN:	DATE:	CHECKED	APPROVED	FIG No:
A4	BW	02.05.12			
	REV: 01	DWG No: 3106004-4A			



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01	02.05.12	ORIGINAL ISSUE	BW	LD

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CONCEPTUAL SITE MODEL - CURRENT SITE CONDITION

WERRIBEE RIVERWALK, SUB-AREA 4A, MELBOURNE WATER, VICTORIA

SHEET SIZE:	DRAWN:	DATE:	CHECKED	APPROVED	FIG No:
A4	BW	02.05.12			
	REV: 01	DWG No: 3106004-4A			

Appendix E

Sample and Analysis Plan

(OTEK, 2008)

environmental, engineering & remediation
practical solutions

Sampling Analysis Plan – Werribee Sub Area 4A

Location:
Werribee Fields, Werribee Victoria
Prepared For:
Melbourne Water
Date Issued:
March 2008

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Rd
St Kilda VIC 3182
Tel (03) 9525 5155
Fax (03) 9593 8555

OTEK Reference: 3106004

SUB-AREA 4A - Sampling Analysis Plan

Werribee Fields, Werribee VIC

Prepared for:

Melbourne Water

100 Wellington Parade
East Melbourne VIC 3002

Prepared by:

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1. INTRODUCTION

OTEK Australia Pty Ltd (OTEK) was retained by Melbourne Water to devise a Sampling and Analysis Program (SAP) prior to undertaking a Detailed Site Investigation (DSI) at an area referred to as Riverwalk – Area 4, located at New Farm Road, Werribee, Victoria (Figure 1).

Area 4 consists of approximately 50 hectares of land known as the 'Hangar Paddock', bound by Princes Highway, New Farm Road and Farm Road, and the land occupied by the Melbourne Water Administration Complex bound by Princes Highway, Area 1 (Powercor Depot), New Farm Road and Area 2. The former portion of land is proposed to be subdivided and developed for a combination of low and medium density residential, commercial and recreational land uses.

As part of this SAP, Area 4 has been divided into nine separate Sub-Areas, 4A to 4I. This SAP focuses on Sub-Area 4A (Site) bordered by Farm Road to the east, Area 1 and Princess Highway to the west and Area 2 to the south. The Site Map (Figure 2) provides a layout of the site, including the locations and boundaries of the other sub-areas.

Sub-Areas 4B through to 4H have previously been investigated. Investigation of Sub-Area 4I is still to be undertaken. Soil analysis results from these studies have been considered for the design of this SAP.

1.1 SITE IDENTIFICATION

The site consists of an area of 5.887 hectares which is within title Volume 10446 Folio 721 and includes part of the paddock which contains the Melbourne Water site offices. Much of the area covered by Sub-Area 4A is open space with trees and a pond. There are also several bitumen car-park areas and associated roads. The shape of Sub-Area 4A is unusual as it has been fashioned around existing Melbourne Water buildings to the west. Figure 3 indicates the location of existing buildings, roads and other features of the site.

1.2 PURPOSE

The SAP has been specifically prepared to develop methodologies for an intrusive soil and groundwater investigation for the site developed in accordance with the findings of OTEK Phase One Report, Werribee

Fields, Werribee, Victoria, dated 10th October 2002 (Report No. M003R200).

1.3 SAMPLING OBJECTIVES

The objectives of the SAP are to use existing information and current guidelines to develop a soil and groundwater investigation program that will allow satisfactory characterisation of the potential contamination in Sub-Area 4A. The data will be used to make decisions regarding suitable uses of the Site and/or fate of the material if found to be non-suitable for the intended use.

The SAP forms part of a consistent approach to contaminated site assessment and management as outlined in the:

- Victorian EPA guidelines;
- Australian Standard AS 4482.1 (2005) Guidelines to the sampling and investigation of potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds; and
- The National Environment Protection (Assessment of Site Contamination) Measure (NEPM), National Environment Protection Council, December 1999.

The SAP presents:

- The objectives for sampling at the site;
- The methodology for determining sampling, sample preservation, sample transportation, sample storage, quality assurance and quality control (QA/QC) and analysis; and
- The number, type and locations for sampling to ensure the collection of representative, reproducible data on the nature and extent of any in situ contamination.

1.4 PREVIOUS INVESTIGATIONS

The following reports have been previously prepared, providing background information regarding land use and archaeologically significant sites at Werribee Fields:

1. Sinclair Knight Consulting Engineers ESA report (dated 17 February 1993) provides limited analytical results and historical site information;

2. Biosis Archaeological and Cultural Heritage Survey report (project reference number 1471, dated March 2000) provided detailed assessment of the archaeological and cultural heritage of the Werribee Fields;

3. Milsearch Review of World War II Era Military Activity at Werribee Fields report (dated April 2000) provides background information regarding the previous military land use and other historically significant sites at Werribee Fields;

4. Enterra Pty Limited Sub Surface Survey Report (dated 31 May 2001) provides information on potential Underground Storage Tanks (USTs), munitions burials, the extent of ferrous and non-ferrous debris and the presence of unexploded ordnances;

5. OTEK Phase One Report (PSI), Werribee Fields, Werribee, Victoria, dated 10th October 2002 (Report No. M003R200); and

6. Area 4 Laboratory Data from initial investigations performed but not yet reported.

2. PROGRAM OVERVEIW

The following sections describe the overview of the program.

2.1 DATA QUALITY OBJECTIVES

The DQOs for this investigation have been developed in accordance with Australian Standard AS4482.1 *Guide to the Sampling and Investigation of Potentially Contaminated Soil* (2005). The DQO process is outlined as follows:

2.1.1 State the Problem

Melbourne Water retained OTEK to:

1. Complete an assessment of the contamination status of soil and groundwater at the site; and
2. Identify the status of the site under the NEPM.

2.1.2 Identify the Decision

The objectives of this study are to determine whether contaminant concentrations in soil and groundwater exceed ecological and human health investigation levels. An evaluation of the contamination status of the site will be undertaken based on these results.

2.1.3 Identify the Inputs Into the Decision

The following inputs will be considered in the DQO process:

- Detailed site history information;
- Site physiology and features;
- Geological and hydrogeological conditions; and
- Results and findings of previous environmental investigations undertaken at the site.

Soil samples will be collected from various depths and locations to adequately characterise the nature and extent of contamination at the site, if any. Groundwater sampling and the grid-based sampling density will be required to comply with AS4482.1 while sample depths will be selected such that suitable assessment of the vertical soil profile can be undertaken. Targeted sample locations and depths will be selected based on known or suspected contamination sources and depths.

Results of the PSI (OTEK, 2007) indicate the potential for contaminants to be present in soil and groundwater above the adopted screening criteria as a result of waste water treatment operations and past activities. It is noted, however, that these results have shown that the overall site does have a low incidence of COPC. Where COPCs have been identified these are predominantly in areas which were considered potential sources of contamination (PSOC).

QA/QC procedures will be implemented in accordance with Australian Standards AS4482.1. Laboratories will be required to achieve Limits of Reporting (LOR) at or below the adopted screening criteria to allow suitable assessment of analytical results.

2.1.4 Define the Boundaries of the Study

The investigation area is bound to the:

a. north by the Princess Highway;

b. south by Area 2;

c. east by New Farm Road; and

d. west by Area 1.

The site boundary is presented in Figure 2.

2.1.5 Develop a Decision Rule

The results of the soil and groundwater analytical testing will be compared to the criteria. If results are above the nominated criteria (investigation levels) further evaluation of risk will be performed.

2.1.6 Optimise the Design for Obtaining Data

Additional sampling will be undertaken where necessary to accurately determine the extent of any contamination found. Where investigation works report a previously unknown source of contamination, further sampling and analysis will be undertaken to address this item. Where development plans change the scope, the SAP will be re-evaluated such that the scope of the investigation aligns with the changes.

2.2 POTENTIAL SOURCES OF CONTAMINATION

The Milsearch Review (2000) of World War II Era Military Activity at Werribee Fields identified an historical plan indicating some infrastructure such as pipes nearby, underground petroleum storage system (UPSS), septic tanks and parts of some buildings. OTEK have taken this into consideration and have developed a sampling plan which will target those locations for investigation.

Locations of potential sources of contamination (PSOC) can be easily identified by results from the geophysical survey and aerial photographs indicating historical and current infrastructure at the Site (Figure 3). Historical sampling and analysis results have demonstrated good correlation between PSOCs and exceedences of the investigation levels (grid sampling has been relatively free of investigation level exceedences). The areas targeted as PSOC have confidently been

identified enabling the sampling for contaminants of potential concern (COPC) to be selective.

The PSOC and the related COPCs are summarised in Table 1 below.

Table 1: PSOCs and COPCs

REFEREFENCE AREA (PSOC)	COPC / Analysis
Former Septic Tank	metals, fluoride, E.coli, ammonia, nitrate, pH
Latrine	metals, fluoride, recoil, ammonia and nitrate, pH
Ablutions	metals, asbestos, recoil, ammonia and nitrate, pH, semi volatile organic compounds (SVOCs)
Workshop	metals, organochlorine pesticides (OCs), organophosphate pesticides (OPs), total petroleum hydrocarbons (TPH), polyaromatic hydrocarbons (PAH) phenols, total cyanide fluoride, asbestos, E.coli, ammonia and nitrate, pH, SVOCs, Full Vic EPA Screen
Former UPSS (Located in Area 5)	metals, TPH, PAHs, phenols, SVOCs, Full Vic EPA Screen
UPSS (Located in Area 2)	metals, TPH, PAHs, phenols, SVOCs, Full Vic EPA Screen

Note: Metals include anatomy, arsenic, barium, beryillium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenium, nickel, selenium,tin, vanadium and zinc.

The EPAV Screen comprises of benzene, toluene, ethylbenzene and total xylenes (BTEX); total petroleum hydrocarbons (TPH); polycyclic aromatic hydrocarbons (PAH); speciated phenols; volatile chlorinated hydrocarbons (VCH); organochlorine (OCP) and organophosphate (OPP) pesticides; polychlorinated biphenyls (PCB), an extended suite of heavy metals (antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, tin and zinc).

For details of what the SVOC analysis contains please refer to Table 8 - Semi Volitile Organic Compounds.

2.2.1 Previous Testing of Area 4 and Case for Revised COPC

A large portion (more than 173 Hectares) of Riverwalk has been extensively tested for a comprehensive suite of analytes. Systematic grid based testing has shown that overall the site has a low incidence of COPC. COPC have been found in target locations considered potential sources of contamination (PSOC).

Sampling of the adjacent areas 4B, 4C, 4D and 4H has reported concentrations above either NEPM "A" HILs or NEPM EILs criteria for metals and dieldrin. There has been no assessment works undertaken in the adjacent area Area 1. The metal analytes that reported above the adopted criteria for each area are listed below:

- 4B reported concentrations above either NEPM "A" HILs or NEPM EILs criteria for arsenic, barium, chromium, copper, manganese, nickel, vanadium and nickel.
- 4C reported concentrations above either NEPM "A" HILs or NEPM EILs for barium, chromium, copper, vanadium, zinc and dieldrin.
- 4D reported concentrations above either NEPM "A" HILs or NEPM EILs criteria for barium, cadmium, manganese, nickel, vanadium and zinc.
- 4H reported concentrations above either NEPM "A" HILs or NEPM EILs criteria for lead, vanadium, zinc and dieldrin.

The number of metal NEPM "A" HILs and NEPM EILs exceedances, the number of samples taken, the concentration ranges and their location can be seen in Table 7A-R Metals Summary.

Listed below are the other various analytes tested for in the four areas 4B, 4C, 4D and 4H:

- Previous investigations in 4B have analysed for the following; BTEX & TPH, PAHs, Phenols, OCPs, OPPs, PCBs, VOCs (Monocyclic Aromatic Hydrocarbons, Oxygenated Compounds, Sulphanated Compounds, Fumigants, Halogenated Aliphatics, Halogenated Aromatics, Trihalomethanes and Naphathlene), Ammonia, Nitrate, Nitrite, E.Coli and Explosives. All concentrations were either below laboratory detection limits or below NEPM "A" HILs and NEPM EILs criteria.

- Previous investigations in 4C have analysed for the following; BTEX & TPH, PAHs, Phenols, OCPs, OPPs, PCBs, VCHs, SVOCs (Phthalate Esters, Nirtoaromatics & Ketones, Nitrosoamines, Haloethers, Anilmines and Benzidines), Dioxins & Furans, Flouride, Cyanide, Ammonia and E.Coli. All concentrations were either below laboratory detection limits or below NEPM "A" HILs and NEPM EILs criteria.

- Previous investigations in 4D have analysed for the following; BTEX & TPH, PAHs, Phenols, OCPs, OPPs, PCBs, VCHs, VOCs (Oxygenated Compounds, Sulphanated Compounds, Halogenated Aliphatics, Halogenated Aromatics), Dioxins & Furans, Flouride and Ethylene Glycol. All concentrations were either below laboratory detection limits or below NEPM "A" HILs and NEPM EILs criteria.

- Previous investigations in 4H have analysed for the following; BTEX & TPH, PAHs, Phenols, OCPs, OPPs, PCBs, VOCs (Volitile Aromatic Compounds, Oxygentaed Compounds, Sulphanated Compounds, Fumigants, Halogenated Aliphatics, Halogenated Aromatics, Trihalomethanes and Naphathlene), SVOCs (Phthalate Esters, Nirtoaromatics & Ketones, Nitrosoamines, Haloethers, Chlorinated Hydrocarbons, Anilmines and Benzidines) Ammonia, Cyanide, Sulphate, Ethylene Glycol, Dioxins Nitrate, Nitrite, E.Coli and Explosives. All concentrations were either below laboratory detection limits or below NEPM "A" HILs and NEPM EILs criteria.

As the site background has been investigated and demonstrated to be clear of many of the analytes previously considered as COPC, it is proposed that a reduced suite of analytes would be sufficient for the grid samples of Sub-Area 4A.

For a complete list of all the analytes tested for, the total number of samples analysed and the concentration ranges for all samples collected in Area 4, refer to Table 8 – Area 4 Analytical Summary.

2.2.2 Accurate Targeting of PSOC

Targeting sample locations based on historical uses of the site to pinpoint PSOC has been very accurate in past investigations in Area 4. This is demonstrated by the greater number of exceedences at target locations than at grid locations.

A table based on the analytical results collected to date summarises all the exceedences from area 4B, 4C, 4D and 4H (Table 9 – Area 4B, 4C,

4D and 4H Exceedences). The number of exceedences for EILs, HILs, and analyte are listed for each location reference.

From Table 9 it can be seen that mainly metals have been found in high concentrations on the site. Furthermore, the majority of high results have correlated with target samples, indicating that identification of PSOC are reliably locating the hotspots of the site.

Over 1,100 samples have been collected in Area 4 of which 58 reported HIL 'A' exceedances (4.7%). The following table (Table 2) shows the number HIL exceedences for target locations as opposed to grid locations. From the table it can be seen, that of the 52 HIL 'A' exceedances reported in Area 4, 89% of the exceedances are from target locations.

Table 2: Summary of HIL Exceedences – Target vs. Grid

	Target Locations	Grid Locations
Total Number of HIL 'A' Exceedences for Area 4	52	6
Total Number of HIL 'A' Exceedences for sub-area 4B	47	5

Table 2 also highlights that area 4B is the main area of hotspot contamination. 4B contains 90% of the HIL 'A' exceedances in Area 4.

2.2.3 Reduced Uncertainties Based on Quantity of Data

The site has been assessed to explore the likelihood of contamination from previous use which have included agricultural, light industrial such as timber treatment and decommissioning of aircraft, and military uses. As such the body of the assessment has been high quantity sampling for a broad suite of analytes. This can now be reassessed for the next phases of proposed sampling based on the quantity of data which has been collected.

There is a provision for estimating the extent of further analysis within AS 4482.1 based on data quality objectives. The strategy indicates whether further sampling will significantly improve the understanding of mean concentrations across the site. It is based on the standard deviation, average and selected criteria value to calculate the number of further samples required. The analytes which have exceeded concentrations (see Table 8) have been assessed using this technique.

Table 3: Number of Samples Needed Based on Previous Sampling

	n	Standard deviation	Average	HIL	EIL
arsenic	3197.60	1078.49	52.51	100	20
barium	>1	88.38	65.17		400
cobalt	>1	8.74	8.39	100	50
copper	>1	249.77	27.85	1000	60
lead	>1	54.03	16.05	300	600
manganese	>1	178.03	186.08	1500	500
Nickel	>1	20.10	19.47	600	60
vanadium	5.64	23.03	25.85		50
zinc	0	62.31	33.23	7000	200
fluoride	0	4.23	4.19	500	500
chromium	2555.30	768.18	62.16	100	400

In Table 3 the rounded number of samples needed (n) to characterise the site have been based on previous analytical results. For arsenic and chromium the numbers of samples (n) are high, while other analytes have sampling numbers less than one further sample. The values for arsenic and chromium are high due to high values exceeding criteria in Sub-Area 4B skewing the results. The results for vanadium are high due to background concentrations.

These results show that for analytes which have not exceeded criteria through extensive testing, their presence has been well characterised at the site. It has been shown that hotspots do exist on the site but they have been well identified and are accurately targeted by sampling (see Section 2.2.2).

It is proposed that targeted sampling continues as originally proposed and metals are tested within grid samples. Grid samples are proposed to contain a reduced analytical suite, a reduced number of samples in the depth profile but maintain the recommended number of samples as indicated by AS 4482.1.

2.2.4 Soil Analytical Program

The previous soil analytical program included substantial grid and target sampling (and analysis). The grid sampling and analysis has

been examined to determine the scope for further sampling and analysis.

Two heavy metals which have exceeded concentrations and skewed the results for the overall site are arsenic and chromium. These high concentrations have been found in hotspots located in Sub-Area 4B. They are not expected to be found in Sub-Area 4A; as there is no associated historical use (such as timber treatment as was the case in 4B).

The potential for migration due to water runoff has been considered. Based on topography, water run-off moves from the CCA timber treatment yard in Sub-Area 4B, in the opposite direction from 4A towards the nearby stormwater drain, across 4I (Figure 2). For this reason it is unlikely that elevated concentrations of arsenic and chromium would be found in Sub-Area 4A.

The scattered debris found on the site has been shown to be unlikely to leach, as demonstrated by the Toxicity Characterisation Leachate Potential / Australia Characterisation Leachate Potential surface debris area assessed and validated by OTEK.

The Enterra area of surface debris area identified a row of anomalies in the location of Sub-Area 4I adjacent to 4B. However it was noted that the quantities found were very low and “point to an earlier clean up to remove lead and brass cartridge cases from the area”. (Enterra, 2001)

Although it is unlikely to find elevated concentrations of metals it is proposed to conduct metals testing with three-part composites in the manner which has been previously approved for the investigation to date.

Organochlorine (OC) and organophosphate (OC) pesticides haven’t been found in concentrations above selected criteria anywhere across the site. For this reason it is unlikely that any pesticide residue will be found in Sub-Area 4A. However, as the grassed area surrounding the lake may have been sprayed preferentially to manage weeds, the analytical suite does include pesticides in three-part composites in these areas in the manner which has been approved for the investigation to date.

There are three targeted locations based on historical information which have been expected to use petroleum hydrocarbons; the former and existing UPSS (both on nearby sub-areas) and the workshop.

PAH haven't been identified in high concentrations anywhere across the site and as such are not anticipated to be found in 4A grid locations.

The previously approved analysis program across the entire site (Area 4) stipulates that asbestos is tested for within 100 metres of the hangars. This program will be continued in Sub-Area 4A.

The resulting suite of analytes grid based soil samples is:

1. Metals: anatomy, arsenic, barium, beryillium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenium, nickel, selenium,tin, vanadium and zinc.
2. Organochlorine pesticides (OCs)
3. Organophosphate pesticides (OPs)
4. Asbestos
5. pH

A summary of the grid and target soil sampling and analytical program is provided in Table 4.

2.2.5 Groundwater Analytical Program

Due to partially shallow sources only two groundwater monitoring wells near former UPSS in Area 5 and UPSS in Area 1 are to be installed. Groundwater will be analysed for PCOC identified in the soil sampling and analytical program of Table 4 below.

Table 4: Soil sampling and analytical program summary

AREA	NUMBER OF SAMPLE LOCATIONS	SAMPLE DEPTH	SAMPLE TYPE	SOIL BORING METHODOLOGY	ANALYSIS
Former Septic Tank	1	To 2m	Target/soil	Test pit	Metals, Fluoride, E.coli, Ammonia, Nitrate, pH
Latrine	1	To 1m	Target/soil	Test pit	Metals, Fluoride, E.coli, Ammonia and Nitrate, pH
Ablutions	1	To 1m	Target/soil	Test pit	Metals, Asbestos, E.coli, Ammonia and Nitrate, pH, SVOCs
Workshop	1	To 2m	Target/soil	Test pit	Metals, OCs, OPs, TPH, PAH Phenols, Total cyanide, Fluoride, Asbestos, E.coli, Ammonia and Nitrate, pH, SVOCs, Full Vic EPA Screen
Former UPSS	1	To 15m	Grid	Soil Bore	Metals, PAH, Phenols, SVOCs, Full Vic EPA Screen
	1	To 15m	Target/water	MW	Metals, PAH, Phenols, SVOCs, Full Vic EPA Screen
Existing UPSS	1	To 15m	Grid	Soil Bore	Metals, PAH, Phenols, SVOCs, Full Vic EPA Screen
	1	To 15m	Target/water	MW	Metals, PAH, Phenols, SVOCs, Full Vic EPA Screen
Grid samples	62	To 1m	Grid	Test pit	Metals, OCP/OPP, Asbestos, pH

Note: Metals include anatomy, arsenic, barium, beryillium, boron, cadmium, chromium, cobalt, copper, lead, manganese, mercury, molybdenium, nickel, selenium,tin, vanadium and zinc.

The EPAV Screen comprises of benzene, toluene, ethylbenzene and total xylenes (BTEX); total petroleum hydrocarbons (TPH); polycyclic aromatic hydrocarbons (PAH); speciated phenols; volatile chlorinated hydrocarbons (VCH); organochlorine (OCP) and organophosphate (OPP) pesticides; polychlorinated biphenyls (PCB), an extended suite of heavy metals (antimony, arsenic, beryllium, cadmium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, tin and zinc).

For details of what the SVOC analysis contains please refer to Table 6 - Semi Volitile Organic Compounds.

3. UNDERGROUND SERVICE CLEARANCE

Location of underground services will be identified prior to excavation of sample locations using available site plans and qualified contractors. The search will be assisted by plans attained from service providers, using the Dial Before You Dig program, and historical service plans made available by Melbourne Water.

4. FIELD INVESTIGATION

The soil sampling program presented within is designed to allow for a comprehensive environmental assessment of potentially contaminated land at the site. The soil sampling program provided therefore takes account of, but is not limited to, site specific characteristics, relevant state and national guidelines and the proposed development.

4.1 SAMPLING PATTERN

The layout of historical site infrastructure including the existing UPSS in Area 1 is shown in Figure 3. The proposed sampling strategy for the site has been developed using both a systematic sampling approach, which provides for broad characterisation of soil conditions, and a targeted sampling approach, which specifically targets areas of the site where PSOC have been identified. Further, the soil sampling program has been designed such that satisfactory characterisation of soil conditions over the whole site (Figure 4) will be undertaken.

Grid based sampling locations were determined using a systematic sampling pattern (see AS4482.1-2005) whereby the first sampling point is determined randomly, subsequent sampling points are determined using a grid pattern (no clustering of sampling points), and sampling

locations are easy to survey. A broad 36 x 36 metre grid for "first pass" surface sampling (Figure 4) will be followed by targeted surface sampling, soil boring and two groundwater monitoring wells to investigate:

- The bulk historical building area (former workshop, latrine, ablutions, septic); and
- The existing and former UPSS.

Target samples will be determined using a judgmental sampling pattern (see AS4482.1). The sample locations will be positioned to provide the most even coverage.

4.1.1 Sample Locations

A total of 62 surface soil test pits and 2 soil bores (grid pattern) and 4 targeted test pits will be sampled. As the site has a total area of 5.887 hectares, a sample pattern combining the following would be implemented:

1. grid-based samples (36 x 36 metres) (Figure 4); and
2. targeted sampling.

This is considered appropriate to meet the minimum requirement set out in Australian Standards AS4482.1.

Targeted soil sample locations (Figure 4) will address PSOCs specific to each target identified in Table 4.

All sample locations are to be positioned using a global positioning system (GPS).

4.1.2 Sample Depths

Grid-based soil samples will typically be collected from depths between 0.25 and 1.0 mBGS to characterise the shallow soils. It is considered the most likely depth where contamination may be observed due to dust deposition or water runoff and also is the point of exposure for human contact. The soil immediately at the surface will be removed during development to an undetermined depth across the site. Therefore the depth of 0.25m BGS will allow the characterisation of the soil to be taken off site.

A further sample will be taken at 0.5m BGS and placed on hold against the occurrence of a high result. In this case the deeper sample would be analysed to delineate the vertical extent of the elevated concentrations.

In addition further samples will be collected when changes in lithology and/or when potential soil contamination are observed. All testpits will be excavated until natural soil is observed with samples to be obtained from the natural soils. This will ensure sufficient samples will be collected to characterise the natural soils of the Site.

Groundwater monitoring wells will be installed to a depth that allows the determination of the presence or absence of groundwater contamination in the vicinity of the UPSSs located in the adjacent areas. The associated soil bore (hand auger and drill rig) soil sample will be advanced to a depth below the groundwater level (approximately 15 mBGS). Soil samples will be obtained progressively and field screened for VOCs. As the nominal depth for UPSS is in the order of 3.5 to 4.0m, soil samples from 4.0m and ones with greatest PID readings will be analysed. If VOCs are detected, a sample from below the VOC reading will be obtained to ensure vertical delineation.

4.2 GROUNDWATER INVESTIGATION

The following sections detail the various components of the groundwater investigation program, including the procedures used to install, sample and survey the groundwater monitoring well east of the UPSS.

4.2.1 Monitoring Well Installation

The location of the ground water monitoring wells has been selected to:

- Target the existing UPSS that is located in Area 1 to the west of Sub-Area 4A;
- Target the former UPSS that is located in Area 5 to the east of Sub-Area 4A;
- Enable adequate assessment of groundwater conditions at the site (i.e. local groundwater flow direction); and
- Determine the extent (if any) of groundwater contamination.

The wells are to be constructed using 50mm diameter Class 18 PVC risers and well screens (0.4mm slot) with flush threaded joints. All well materials will be cleaned prior to placement down the annulus of the borehole. Well materials will be measured and assembled at the borehole prior to placement based on the depth at which groundwater is encountered and stabilised within 10 minutes of drilling works being suspended.

Each screen will be required to extend a minimum of 2 m beneath the Standing Water Level (SWL) to 1.0 m above the water table. Placement of the screen will also consider seasonal water table fluctuations as extrapolated from previous investigations.

The gravel pack will be added to provide filter media to prevent fines within the aquifer from blocking the screened section of the well. A 250mm thick granular bentonite seal will then be placed above the filter pack and the remainder of the hole will be filled with grout. An expandable cap will seal the top of the well casing. A cast iron flush mounted road box will be concreted over the top of the well to protect it from damage by vehicular and pedestrian traffic. Well construction details will be shown on drill logs.

4.2.2 Monitoring Well Development

Development of monitoring wells will be undertaken within 24 hours of installation. Well development will be achieved by removing at least 10 times the well volume with a dedicated pump until the water parameters (dissolved oxygen, pH, temperature, electrical conductivity and redox) have stabilised within approximately 10% over three consecutive readings. Well development will cease when groundwater becomes visibly clearer.

4.2.2 Monitoring Well Purging and Sampling

The following sequential procedure will be implemented by qualified field personnel to sample groundwater from monitoring wells in accordance with Australian and New Zealand Standard (AS/NZS 5667.11:1998) *Water Quality Sampling, Part 11: Guidance on Sampling of Groundwaters*.

- Measuring the standing water level in the well from the top of the casing;

- Purging and disposing of a minimum of five well volumes of water (or until dry) from the well and until the groundwater parameters (dissolved oxygen, pH, temperature, electrical conductivity and redox) have stabilised within approximately 10% over three consecutive readings;

- Using low flow micro-purge sampling equipment to fill the laboratory prepared sample containers with groundwater abstracted from the well. All sample containers will be filled to the top to eliminate available headspace;

- Field filtering of samples to be analysed for heavy metals using a 45 micron filter; and

- Placing all sample containers on ice immediately after sampling for transport to the appropriate analytical laboratory using Chain-of-Custody documentation and procedures for testing.

4.2.3 Groundwater Analytical Program

The groundwater analytical program was designed to target PCOCs associated with PSOC and provide information regarding the general quality of groundwater at the site. The groundwater analytical program is summarised in **Table 5**.

Table 5: Groundwater Analytical Program

MONITORING WELL	ANALYTICAL SUITE	LOCATION
MW-7	TPH, BTEX, PAHs, heavy metals	UPSS Area (east)
MW-8	TPH, BTEX, PAHs, heavy metals	UPSS Area (west)

The laboratory analytical reports will be maintained along with 'sample receipt advice' and Chain of Custody (COCs) documentation for inclusion in the DSI Report.

5. SAMPLING COLLECTION METHODOLOGIES

Sampling methodologies selected for the project have been selected in accordance with:

- The nature of contaminants;

- Equipment availability;

- Site accessibility;
- Regional geological and hydrogeological conditions;
- Health and safety requirements of site personnel as documented in the site specific Health Safety and Environment Plan (HSEP) developed for the site;
- The potential for dust, odours and storm water run-off;
- The potential for vertical and/or lateral contamination during and after the collection of samples.

Accordingly, the following soil sampling methodology is to be adopted:

- Samples will be obtained directly from the hand auger, pick or shovel using a new pair of disposable latex gloves for each sample. Soil samples will be sealed in laboratory-prepared glass jars and put immediately on ice after sampling for transport to the primary or secondary analytical laboratory using Chain-of-Custody (COC) documentation and procedures for testing.

The following groundwater sampling methodology is to be followed:

- Low flow micro-purge sampling equipment will be used to fill the laboratory prepared sample containers with groundwater abstracted from the well. All sample containers will be filled to the top to eliminate available headspace.

Details regarding the QA/QC procedures employed during sampling activities are presented below in section 6.

5.1 FIELD SCREENING

For all samples collected the following field survey methodology will apply. Soil samples will be screened for the presence of Volatile Organic Compounds (VOCs) in-situ utilising a Photo-Ionisation Detector (PID). The process to be used for field screening of soil samples is outlined as follows:

1. A sub-sample from each sample location and depth will be sealed into a plastic bag immediately upon retrieval to minimise volatile losses to the atmosphere;

2. The sub-sample will be placed into a re-sealable plastic bag and allowed to equilibrate for approximately 10 minutes;

3. The bag will then be punctured with the tip of the PID probe to obtain a sample of the head-space gases; and

4. Field screening results will be presented as numerical expressions on soil boring logs in the column titled 'PID Reading'.

6. QUALITY ASSURANCE/QUALITY CONTROL

The following sections discuss the QA/QC program.

6.1 FIELD LOGGING

To ensure the maintenance of sample integrity the relevant following information will be recorded in-situ at the time of sampling. To the maximum extent possible, all portions of each sample will be carefully examined and the physical properties of the sample described. For each soil sample collected, the following information will be recorded:

- Project title;
- Job number;
- Date;
- Name of person collecting sample;
- Exact location of sampling points and sampling point identification;
- Method of sample collection;
- Weather conditions;
- Surface conditions;
- Soil conditions including soil colour, texture, odour, moisture content, plasticity, and staining;
- USCS Classification;
- Olfactory rankings in accordance with that specified in AS4482.1;
- Aesthetic observations;
- Soil profile;
- Depth of samples collected; and
- PID (organic vapour analysis).

All soil boring logs will be appended to the final report for completeness. In addition, all field activities will be recorded throughout the project on daily field logs including:

- Project name;
- Project number;
- Site address;
- Personnel and contractors on-site;
- The time and date;
- Summary of tasks undertaken at the site; and
- A time and equipment summary.

All soil sample locations will be identified using GPS for future reference.

6.2 SAMPLE CONTAINERS

In accordance with AS4482.1 all samples are to be placed in appropriate sample containers provided by the laboratory and placed in a chilled 'esky' for transportation to a NATA registered laboratory under chain of custody conditions.

6.3 BLIND REPLICATES

Blind replicate samples will be obtained at a frequency of approximately 1 per 20 samples collected. It is intended that blind replicate samples be collected from those locations where contamination is identified such that a quantitative assessment of Relative Percent Differences (RPDs) can be made.

6.4 SPLIT DUPLICATES

Split duplicate samples will be obtained at a frequency of approximately 1 per 20 samples collected. It is intended that split duplicate samples be collected from those locations where contamination is identified such that a quantitative assessment of RPD values can be made.

6.5 EQUIPMENT BLANKS

Rinsate blank samples are to be collected at a rate of one per matrix per piece of equipment per day.

6.6 TRIP BLANKS

Trip blank samples are to be collected at a rate of one sample per batch.

6.7 CHAIN OF CUSTODY DOCUMENTATION

Chain of custody documentation will accompany each sample to the selected laboratory to allow the movement, custody and location of each sample to be tracked, to ensure analysis of samples within appropriate holding times, and to record information about the preservation techniques and analysis required on the samples. Chain of custody forms are to be filled out in-situ at the time of sampling or at the end of each day. In accordance with AS4482.1 and NEPM, chain of custody documentation will include the following information:

- Time and date of sample collection
- Name and contact details of client
- Departure time from site
- Time and date of sample received by laboratory
- Sample matrix
- Storage conditions
- Nature of the sample
- Analytes to be determined
- Where the use of composite samples is required, the set of samples that are to be composed for analysis
- Where heavy contamination is expected
- Sample preservation method
- Personnel details (i.e. name of persons transferring and receiving samples)
- Site identification
- Dispatch courier
- Other specific instructions (where applicable) including handling of samples during the analysis (i.e. special safety precautions)
- Required holding times

6.8 HOLDING TIMES

All soil and water samples collected from the site are required to be submitted to the selected laboratories within recommended holding times to ensure analytical results reported by the laboratories are representative of site conditions.

6.9 EQUIPMENT CALIBRATION

The PID will be calibrated by OETK field staff with isobutylene gas at the beginning and/or end of each day. Each time the PID is calibrated an entry will be recorded in a log book. Each entry is required to specify the following detail:

- Date of calibration;
- OTEK project number;
- Personnel responsible for calibrating the equipment;
- Calibration gas details including type and ppm; and
- PID reading following calibration.

Equipment used to measure groundwater parameters, as required during purging and sampling activities, is to be calibrated every 6 months. A certificate will be issued by the environmental suppliers contracted to calibrate the equipment.

All calibration certificates/log entries relevant to the project will be presented as an appendix to the final report.

6.10 EQUIPMENT DECONTAMINATION

All equipment used at the site will be decontaminated prior to the commencement of field work, between each sampling event, between sampling locations and at the completion of field work. This is required to minimise the potential for cross-contamination of samples and the transport of contamination off-site.

Small equipment will be decontaminated using the following methodology:

- Scrubbing with a brush using decon 90 and potable water;
- Rinsing of equipment with potable water; and
- Rinsing of equipment with de-ionised water.

Large equipment will be decontaminated between sample locations in a designated decontamination area.

6.11 QUALIFIED PERSONNEL

Field work will be conducted by qualified personnel. Field personnel employed to undertake soil and groundwater investigations will remain consistent throughout the project to ensure soil analytical results across the site are comparable.

6.12 LABORATORY QUALITY ASSURANCE/QUALITY CONTROL

The analytical laboratories to be used by OTEK are required to adhere to NATA-endorsed testing methodologies and conduct regular quality control checks on their analyses. OTEK requires these laboratories to regularly provide results of reagent blanks, control standards, repeat duplicates and recoveries to enable an assessment of the accuracy and precision of soil and groundwater results reported by the selected laboratories.

All laboratory certificates are required to display the NATA accreditation stamp and sample receipt advice is expected to accompany each laboratory certificate to confirm the condition of samples upon receipt by the selected laboratories.

6.13 PRACTICAL QUANTIFICATION LIMITS AND ANALYTICAL METHODS

To enable a quantitative assessment of soil and groundwater contamination Laboratory Limits of Reporting (LOR) will be less than the applicable criteria.

7. REPORTING

At the conclusion of the Detailed Site Investigation (DSI) a comprehensive report detailing the findings of the investigation will be prepared in accordance with Schedule B (2) of the NEPM, Guideline on Data Collection, Sample Design and Reporting (1999).

The DSI report shall include the following components:

- An executive summary;
- Scope of work;

- Site identification details;
- A summary of the site history investigation findings presented in the PSI (2002);
- Details of the site conditions and surrounding environment;
- Local and regional geological and hydrogeological conditions;
- A summary of the SAP;
- Identification of the field and laboratory QA/QC performed;
- An evaluation of QA/QC data;
- Identification of, and assumptions and limitations associated with, regulatory criteria adopted for the investigation;
- Soil and groundwater analytical results;
- Site characteristics;
- Health and ecological risk assessment (conceptual unless otherwise required); and
- Conclusions and recommendations.

8. LIMITATIONS

The conclusions presented in this report are relevant to the condition of the site and the state of legislation currently enacted as at the date of this report. OTEK does not make any representation or warranty that the conclusions in this report will be applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.

OTEK has used a degree of skill and care ordinarily exercised by reputable members of our profession practising in the same or similar locality. This report has been prepared for Melbourne Water, for the specific purpose to which it refers. No responsibility is accepted to any third party and neither the whole of the report or any part or reference thereto may be published in any document, statement or circular nor in any communication with third parties without our prior written approval of the form and context in which it will appear.

This report and the information contained in it is the intellectual property of OTEK. Melbourne Water and GHD are granted an exclusive licence for the use of the report for the purpose described in the report.

9. REFERENCES

AS 4482.1 (2005) *Guide to the investigation and sampling of sites with potentially contaminated soil, Part 1: Non-volatile and semi-volatile compounds*, Australian Standards, dated 2nd November 2005.

Biosis (2000) *Biosis Archaeological and Cultural Heritage Survey report*, (project reference number 1471), dated March 2000.

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Milsearch (2000) Milsearch Review of World War II Era Military Activity at Werribee Fields report (dated April 2000).

OTEK (2002) *OTEK Phase One Report, Werribee Fields*, Werribee, Victoria, dated 10th October 2002 (Report No. M003R200)

SKM (1993) *Sinclair Knight Consulting Engineers ESA report*, dated 17 February 1993.

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TABLE 6
SEMI-VOLITILE ORGANIC COMPOUNDS
MELBOURNE WATER, WERRIBEE, VICTORIA

Analyte	Analyte
Phenols	**Nitroaromatics and Ketones**
2,3,4,6-tetrachlorophenol NATA 0.5 2	1,4-dinitrobenzene NATA 0.5 2
2,4,5-trichlorophenol NATA 0.5 2	2,4-dinitrotoluene NATA 1 4
2,4,6-trichlorophenol NATA 0.5 2	2,6-dinitrotoluene NATA 1 4
2,4-dimethylphenol NATA 0.5 2	4-(dimethylamino)
2,4-dichlorophenol NATA 0.5 2	azobenzene NATA 0.5 2
2,6-dichlorophenol NATA 0.5 2	5-nitro-o-toluidine NATA 0.5 2
2-chlorophenol NATA 0.5 2	Azobenzene NATA 0.5 2
2-methylphenol NATA 0.5 2	Acetophenone NATA 0.5 2
2-nitrophenol NATA 0.5 2	Isophorone NATA 0.5 2
3-&4-methylphenol NATA 1 4	Nitrobenzene NATA 0.5 2
4-chloro-3-methylphenol NATA 0.5 2	Phenacetin NATA 0.5 2
4-nitrophenol1 NATA 0.5 2	Pentachloronitrobenzene NATA 0.5 2
Pentachlorophenol NATA 1 4	**Phthalates**
Phenol NATA 0.5 2	Bis(2-ethylhexyl) phthalate NATA 5 20
Polynuclear Aromatic Hydrocarbons	Butyl benzyl phthalate NATA 0.5 2
2-chloronaphthalene NATA 0.5 2	Diethylphthalate NATA 0.5 2
2-(acetylamino) fluorene NATA 0.5 2	Dimethyl phthalate NATA 0.5 2
2-methylnaphthalene NATA 0.5 2	Di-n-butyl phthalate NATA 0.5 2
3-methylcholanthrene NATA 0.5 2	Di-n-octyl phthalate NATA 0.5 2
7,12- dimethylbenz(a)anthracene NATA 0.5 2	**Haloethers**
Acenaphthene NATA 0.5 2	4-chlorophenyl phenyl ether NATA 0.5 2
Acenaphthylene NATA 0.5 2	4-bromophenyl phenyl ether NATA 0.5 2
Anthracene NATA 0.5 2	Bis(2-chloroethyl)ether NATA 0.5 2
Benz(a)anthracene NATA 0.5 2	Bis(2-chloroethoxy)
Benzo(a) pyrene NATA 0.5 2	methane NATA 0.5 2
Benzo(b)&(k)fluoranthene NATA 1 4	Bis(2-chloroisopropyl) ether NATA 0.5 2
Benzo(g,h,i)perylene NATA 0.5 2	**Chlorinated Hydrocarbons**
Chrysene NATA 0.5 2	1,2,4,5-tetrachlorobenzene NATA 0.5 2
Dibenz(a,h)anthracene NATA 0.5 2	1,2,4-trichlorobenzene NATA 0.5 2
Fluoranthene NATA 0.5 2	1,2-dichlorobenzene NATA 0.5 2
Fluorene NATA 0.5 2	1,3-dichlorobenzene NATA 0.5 2
Indeno(1,2,3-c,d)pyrene NATA 0.5 2	1,4-dichlorobenzene NATA 0.5 2
Naphthalene NATA 0.5 2	Hexachlorobenzene (HCB) NATA 0.5 2
Phenanthrene NATA 0.5 2	Hexachlorobutadiene NATA 0.5 2
Pyrene NATA 0.5 2	Hexachlorocyclopentadiene NATA 2 4
Nitrosamines	Hexachloroethane NATA 0.5 2
4-aminobiphenyl NATA 0.5 2	Hexachloropropene NATA 0.5 2
Diphenylamine NATA 0.5 2	Pentachlorobenzene NATA 0.5 2
N-nitrosodiethylamine NATA 0.5 2	Pentachloroethane NATA 0.5 2
N-nitrosopyrrolidine NATA 1 4	**Organochlorine Pesticides**
N-nitrosomorpholine NATA 0.5 2	4,4-DDD NATA 0.5 2
N-nitrosodi-n-propylamine NATA 0.5 2	4,4-DDE NATA 0.5 2
N-nitrosopiperidine NATA 0.5 2	4,4-DDT NATA 1 4
N-nitrosodi-n-butylamine NATA 0.5 2	a-BHC NATA 0.5 2

TABLE 6 (continued)
SEMI-VOLITILE ORGANIC COMPOUNDS
MELBOURNE WATER, WERRIBEE, VICTORIA

Analyte	Analyte
Organochlorine Pesticides (Cont.)	**Organophosphorus Pesticides (Cont.)**
b-BHC NATA 0.5 2	Fenthion NATA 0.5 2
d-BHC NATA 0.5 2	Malathion NATA 0.5 2
g-BHC (Lindane) NATA 0.5 2	Methyl parathion NATA 0.5 2
Aldrin NATA 0.5 2	Mevinphos (Phosdrin) NATA 0.5 2
cis-chlordane NATA 0.5 2	Monocrotophos1 NATA 10 20
Dieldrin NATA 0.5 2	Naled (Dibrom) NATA 0.5 2
Endrin NATA 0.5 2	Parathion NATA 0.5 2
Endrin aldehyde NATA 0.5 2	Phorate NATA 0.5 2
Endrin ketone NATA 0.5 2 E017.2 E017.1	Profenofos NATA 0.5 2
Endosulfan I NATA 0.5 2	Prothiofos NATA 0.5 2
Endosulfan II NATA 0.5 2	Ronnel NATA 0.5 2
Endosulfan sulphate NATA 0.5 2	Stirophos NATA 0.5 2
Heptachlor NATA 0.5 2	Sulfotepp NATA 0.5 2
Heptachlor epoxide NATA 0.5 2	**Anilines and Benzedines**
Methoxychlor NATA 0.5 2	1-naphthylamine NATA 0.5 2
trans-chlordane NATA 0.5 2	2-naphthylamine NATA 0.5 2
Organophosphorus Pesticides	2-nitroaniline NATA 1 4
Azinophos methyl NATA 0.5 2	3-nitroaniline NATA 1 4
Chlorpyrifos NATA 0.5 2	4-nitroaniline NATA 0.5 2
Coumaphos NATA 0.5 2	4-chloroaniline NATA 0.5 2
Demeton-O NATA 0.5 2	Aniline NATA 0.5 2
Demeton-S NATA 0.5 2	Dibenzofuran NATA 0.5 2
Diazinon NATA 0.5 2	Carbazole NATA 0.5 2
Dichlorvos NATA 0.5 2	o-toluidine NATA 0.5 2
Dimethoate NATA 0.5 2	**Miscellaneous Compounds**
Disulfoton NATA 0.5 2	Benzyl alcohol NATA 0.5 2
Ethoprop NATA 0.5 2	Ethyl methanesulfonate NATA 0.5 2
EPN NATA 0.5 2	Isosafrole NATA 0.5 2
Fenitrothion NATA 0.5 2	Methyl methanesulfonate
Fensulfothion NATA 0.5 2	Safrole

TABLE 7A
SUB-AREA METALS SUMMARY - ANITOMY
MELBOURNE WATER, WERRIBEE, VICTORIA

Anitomy						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	Enterra location	11	342	0	1	0
4C	None	0	0	0	0	0
4D	None	26	7	1	0	0
4H	None	14	6	2.5	0	0

Note: Enterra Location - Geophysical Anomaly, Enterra Report May 2001

TABLE 7B
SUB-AREA METALS SUMMARY
ARSENIC
MELBOURNE WATER, WERRIBEE, VICTORIA

Arsenic						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	Grid	235	29900	2	22	12
4C	None	37	10	4	0	0
4D	None	97	10	2	0	0
4H	None	72	24	9	0	0

TABLE 7C
SUB-AREA METALS SUMMARY
BARIUM
MELBOURNE WATER, WERRIBEE, VICTORIA

Barium						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	CCA	117	450	19	1	0
4C	Grid / Inflammable Hut	44	580	30	2	0
4D	Grid	99	730	24	3	0
4H	None	73	520	15	0	0

Note: CCA - Copper, Chromium and Arsenic Timber Treatment Plant.

TABLE 7D
SUB-AREA METALS SUMMARY
BERYLLIUM
MELBOURNE WATER, WERRIBEE, VICTORIA

Beryllium						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	59	2	1	0	0
4C	None	1	2	1	0	0
4D	None	31	2	1	0	0
4H	None	18	2	1	0	0

TABLE 7E
SUB-AREA METALS SUMMARY
BORON
MELBOURNE WATER, WERRIBEE, VICTORIA

Boron						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	19	18	5	0	0
4C	None	7	70	5	0	0
4D	None	23	70	5	0	0
4H	None	3	8	5	0	0

TABLE 7F
SUB-AREA METALS SUMMARY
CADMIUM
MELBOURNE WATER, WERRIBEE, VICTORIA

Cadmium						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	5	2	0.1	0	0
4C	None	20	2	0.05	0	0
4D	Suspected Burial trench & Detritus Zone	28	21	0.05	1	1
4H	None	14	1	0.1	0	0

TABLE 7G
SUB-AREA METALS SUMMARY
CHROMIUM
MELBOURNE WATER, WERRIBEE, VICTORIA

Chromium						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	Grid CCA Test Butt Enterra location Emergency Power House Store	222	21200	16	15	3
4C	Septic	67	132	6	0	1
4D	None	94	132	2	0	0
4H	None	60	74	5	0	0

Note: CCA - Copper, Chromium and Arsenic Timber Treatment Plant.
Test Butt - Ammunition testing range
Enterra Location - Geophysical Anomaly, Enterra Report May 2001

TABLE 7H
SUB-AREA METALS SUMMARY
COBALT
MELBOURNE WATER, WERRIBEE, VICTORIA

Cobalt						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	104	38	5	0	0
4C	None	30	44	7	1	0
4D	None	94	34	4	0	0
4H	None	60	41	4	0	0

TABLE 7I
SUB-AREA METALS SUMMARY
COPPER
MELBOURNE WATER, WERRIBEE, VICTORIA

Copper						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	Grid CCA Test Butt Enterra location Emergency Power House Store Ball Bearing store	222	6890	8	1	13
4C	Septic	40	75	9	1	0
4D	None	94	75	6	0	0
4H	None	60	45	6	0	0

Note: CCA - Copper, Chromium and Arsenic Timber Treatment Plant.
Test Butt - Ammunition testing range
Enterra Location - Geophysical Anomaly, Enterra Report May 2001

TABLE 7J
SUB-AREA METALS SUMMARY
LEAD
MELBOURNE WATER, WERRIBEE, VICTORIA

Lead						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	102	108	2	0	0
4C	None	55	210	0	0	0
4D	None	94	200	7	0	0
4H	Battery Hut Suspected Burial/ Burn Location	78	1240	4	1	2

TABLE 7K
SUB-AREA METALS SUMMARY
MANGANESE
MELBOURNE WATER, WERRIBEE, VICTORIA

Manganese						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	Grid CCA Test Butt Hanger Surrounds Enterra Location	134	780	118	11	0
4C	None	43	441	43	0	0
4D	Grid	99	810	92	4	0
4H	None	60	494	94	0	0

Note: CCA - Copper, Chromium and Arsenic Timber Treatment Plant.
Test Butt - Ammunition testing range
Enterra Location - Geophysical Anomaly, Enterra Report May 2001

TABLE 7L
SUB-AREA METALS SUMMARY
MERCURY
MELBOURNE WATER, WERRIBEE, VICTORIA

Mercury						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	18	0.53	0.05	0	0
4C	None	12	0.8	0.05	0	0
4D	None	46	0.8	0.05	0	0
4H	None	23	0.6	0.05	0	0

TABLE 7M
SUB-AREA METALS SUMMARY
MOLYBEDENUM
MELBOURNE WATER, WERRIBEE, VICTORIA

Molybedenum						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	0	0	0	0	0
4C	None	0	0	0	0	0
4D	None	0	0	0	0	0
4H	None	0	0	0	0	0

TABLE 7N
SUB-AREA METALS SUMMARY
NICKEL
MELBOURNE WATER, WERRIBEE, VICTORIA

Nickel						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	Grid Hanger Surrounds	120	120	13	8	0
4C	None	43	54	4	0	0
4D	Grid	100	110	12	1	0
4H	None	76	57	9	0	0

TABLE 7O
SUB-AREA METALS SUMMARY
SELENIUM
MELBOURNE WATER, WERRIBEE, VICTORIA

Selenium						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	0		0	0	0
4C	None	0	0	0	0	0
4D	None	0	0	0	0	0
4H	None	1	2	2	0	0

TABLE 7P
SUB-AREA METALS SUMMARY
TIN
MELBOURNE WATER, WERRIBEE, VICTORIA

Tin						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	None	1	15	1	0	0
4C	None	4	12	1	0	0
4D	None	8	12	1	0	0
4H	None	5	13	1	0	0

TABLE 7Q
SUB-AREA METALS SUMMARY
VANADIUM
MELBOURNE WATER, WERRIBEE, VICTORIA

Vanadium						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration (mg/kg)**	**Minimum Concentration (mg/kg)**	**Number of EIL Exceedances**	**Number of HIL 'A' Exceedances**
4B	Grid Test Butt CCA Hanger Surrounds Enterra Location	123	125	11	14	0
4C	Grid Carpenters Workshop Incinerator Latrines & Ablutions	52	61	6	16	0
4D	Grid Suspected Burial trench & Detritus Zone Unknown	99	67	16	21	0
4H	Grid Ball Bearing Store Incinerator & Compound Armament Section Store Emergency Power House	80	73	9	19	0

Note: CCA - Copper, Chromium and Arsenic Timber Treatment Plant.
Test Butt - Ammunition testing range
Enterra Location - Geophysical Anomaly, Enterra Report May 2001

TABLE 7R
SUB-AREA METALS SUMMARY
ZINC
MELBOURNE WATER, WERRIBEE, VICTORIA

Zinc						
Sub-Area	**Area with EIL Exceedance**	**Number of Samples**	**Maximum Concentration**	**Minimum Concentration**	**Number of EIL Exceedances**	**Number of HIL 'A'**
4B	Grid	128	770	25	1	0
4C	Grid Latrines and Ablutions	37	330	34	2	0
4D	None	94	340	27	1	0
4H	Suspected Burial/ Burn Location	73	1000	17	2	1

TABLE 8
AREA 4 ANALYTICAL SUMMARY
MELBOURNE WATER, WERRIBEE, VICTORIA

Analyte	Number of Samples	Minimum Concentration	Maximum Concentration	EIL (mg/kg)	Units
1,1,1,2-tetrachloroethane	31	<0.5	<0.5	*	mg/kg
1,1,1-trichloroethane	31	<0.5	<0.5	*	mg/kg
1,1,2,2-tetrachloroethane	31	<0.5	<0.5	*	mg/kg
1,1,2-trichloroethane	31	<0.5	<0.5	*	mg/kg
1,1-dichloroethane	31	<0.5	<0.5	*	mg/kg
1,1-dichloroethene	31	<0.5	<0.5	*	mg/kg
1,1-dichloropropene	17	<0.5	<0.5	*	mg/kg
1,2,3-trichlorobenzene	33	<0.5	<0.5	*	mg/kg
1,2,3-trichloropropane	31	<0.5	<0.5	*	mg/kg
1,2,4-trichlorobenzene	75	<0.5	<0.5	*	mg/kg
1,2,4-trimethylbenzene	25	<0.5	<0.5	*	mg/kg
1,2-dibromo-3-chloropropane	31	<0.5	<0.5	*	mg/kg
1,2-dibromoethane	31	<0.5	<0.5	*	mg/kg
1,2-dichlorobenzene	75	<0.5	<0.5	*	mg/kg
1,2-dichloroethane	31	<0.5	<0.5	*	mg/kg
1,2-dichloropropane	31	<0.5	<0.5	*	mg/kg
1,3,5-trimethylbenzene	25	<0.5	<0.5	*	mg/kg
1,3-dichlorobenzene	75	<0.5	<0.5	*	mg/kg
1,3-dichloropropane	31	<0.5	<0.5	*	mg/kg
1,4-dichlorobenzene	75	<0.5	<0.5	*	mg/kg
1,4-dinitrobenzene	11	<0.5	<0.5	*	mg/kg
1.1-Dichloropropylene	15	<0.5	<0.5	*	mg/kg
1.2.4.5-Tetrachlorobenzene	43	<0.5	<0.5	*	mg/kg
1.3.5-Trichlorobenzene	33	<0.5	<0.5	*	mg/kg
1.3.5-Trinitrobenzene	71	<0.5	<0.5	*	mg/kg
1.3-Dinitrobenzene	49	<0.1	<0.1	*	mg/kg
1-Naphthylamine	43	<0.5	<0.5	*	mg/kg
2-(acetylamino) fluorene	11	<0.5	<0.5	*	mg/kg
2,2-dichloropropane	31	<0.5	<0.5	*	mg/kg
2.3.4.6-Tetrachlorophenol	43	<0.5	<0.5	*	mg/kg
2.4-& 2.6-DNT(Isomeric Mixture)	49	<0.1	<0.1	*	mg/kg
2.4.5-Trichlorophenol	559	<0.5	<0.5	*	mg/kg
2.4.6-TNT	49	<0.1	<0.1	*	mg/kg
2.4.6-Tribromophenol	1	<0.5	<0.5	*	mg/kg
2.4.6-Trichlorophenol	559	<0.5	<0.5	*	mg/kg
2.4-Dichlorophenol	559	<0.5	<0.5	*	mg/kg
2.4-Dimethylphenol	559	<0.5	<0.5	*	mg/kg
2.4-Dinitrotoluene	81	<1	<1	*	mg/kg
2.6-Dichlorophenol	418	<0.5	<0.5	*	mg/kg
2.6-Dinitrotoluene	81	<1	2.8	*	mg/kg
2-Amino-4.6-DNT	49	<0.1	<0.1	*	mg/kg
2-Butanone (MEK)	5	<5	<5	*	mg/kg
2-Chloronaphthalene	43	<0.5	<0.5	*	mg/kg
2-Chlorophenol	559	<0.5	<0.5	*	mg/kg
2-Chlorotoluene	33	<0.5	<0.5	*	mg/kg
2-Fluorobiphenyl	1	<0.1	<0.1	*	%
2-Fluorophenol	1	<0.1	<0.1	*	%
2-Hexanone (MBK)	5	<5	<5	*	mg/kg
2-Methylnaphthalene	43	<0.5	<0.5	*	mg/kg
2-Methylphenol	557	<0.5	<0.5	*	mg/kg
2-naphthylamine	11	<0.5	<0.5	*	mg/kg
2-Nitroaniline	43	<1	<1	*	mg/kg
2-Nitrophenol	557	<0.5	<0.5	*	mg/kg
2-Nitrotoluene	49	<0.1	<0.1	*	mg/kg

TABLE 8
AREA 4 ANALYTICAL SUMMARY
MELBOURNE WATER, WERRIBEE, VICTORIA

Analyte	Number of Samples	Minimum Concentration	Maximum Concentration	EIL (mg/kg)	Units
2-Picoline	33	<0.5	0.6	*	mg/kg
3 & 4-Methylphenol	416	<1	<1	*	mg/kg
3.3'-Dichlorobenzidine	33	<0.5	<0.5	*	mg/kg
3-Methylcholanthrene	43	<0.5	<0.5	*	mg/kg
3-Nitroaniline	43	<1	<1	*	mg/kg
3-Nitrotoluene	49	<0.1	<0.1	*	mg/kg
4-& 2-AM-DNT(Isomeric Mixture)	49	<0.1	<0.1	*	mg/kg
4-(dimethylamino) azobenzene	11	<0.5	<0.5	*	mg/kg
4-Amino.2.6-DNT	49	<0.1	<0.1	*	mg/kg
4-Aminobiphenyl	43	<0.5	<0.5	*	mg/kg
4-Bromofluorobenzene	1	<0.1	<0.1	*	%
4-Bromophenyl phenyl ether	43	<0.5	<0.5	*	mg/kg
4-Chloro-3-methylphenol	559	<0.5	<0.5	*	mg/kg
4-Chloroaniline	43	<0.5	<0.5	*	mg/kg
4-Chlorophenyl phenyl ether	43	<0.5	<0.5	*	mg/kg
4-Chlorotoluene	33	<0.5	<0.5	*	mg/kg
4-Methyl-2-pentanone (MIBK)	5	<5	<5	*	mg/kg
4-Methylphenol	142	<0.5	<0.5	*	mg/kg
4-Nitroaniline	43	<0.5	<0.5	*	mg/kg
4-Nitroquinoline-N-oxide	33	<0.5	<0.5	*	mg/kg
4-Nitrotoluene	49	<0.1	<0.1	*	mg/kg
4-Terphenyl-d14	1	<0.1	<0.1	*	%
5-Nitro-o-toluidine	43	<0.5	<0.5	*	mg/kg
7.12-Dimethylbenz(a)anthracene	43	<0.5	<0.5	*	mg/kg
a-BHC	35	0.5	0.5	*	mg/kg
Acenaphthene	677	<0.5	<0.5	*	mg/kg
Acenaphthylene	677	<0.5	<0.5	*	mg/kg
Acetophenone	43	<0.5	<0.5	*	mg/kg
a-Endosulphan	640	<0.05	<0.05	*	mg/kg
Aldrin	640	<0.05	<0.05	*	mg/kg
Ammonia	91	<20	8.2	*	mg/kg
Aniline	43	<0.5	<0.5	*	mg/kg
Anthracene	677	<0.5	1.4	*	mg/kg
Antimony	984	<5	342	*	mg/kg
Arsenic	1122	<5	29900	20	mg/kg
Asbestos	1	-	-	*	mg/kg
Azinphos Methyl	383	<0.05	<0.05	*	mg/kg
Azobenzene	43	<1	<1	*	mg/kg
Barium	1002	<10	730	300	mg/kg
b-BHC	640	<0.05	<0.05	*	mg/kg
b-Endosulphan	640	<0.05	<0.05	*	mg/kg
Benz(a)anthracene	675	<0.5	<0.5	*	mg/kg
Benzene	268	<0.2	<0.2	*	mg/kg
Benzo(a)Pyrene	677	<0.5	<0.5	*	mg/kg
Benzo(b) & Benzo(k)fluoranthene	212	<1	<1	*	mg/kg
Benzo(b)fluoranthene	466	<0.5	0.5	*	mg/kg
Benzo(g,h,i)Perylene	677	<0.5	<0.5	*	mg/kg
Benzo(k)fluoranthene	466	<0.5	<0.5	*	mg/kg
Benzyl alcohol	11	<0.5	<0.5	*	mg/kg
Beryllium	984	<1	2	*	mg/kg
Bis(2-chloroethoxy) methane	43	<0.5	<0.5	*	mg/kg
Bis(2-chloroethyl) ether	43	<0.5	<0.5	*	mg/kg
Bis(2-chloroisopropyl) ether	11	<0.5	<0.5	*	mg/kg
bis(2-ethylhexyl) phthalate	43	<5	<5	*	mg/kg

TABLE 8
AREA 4 ANALYTICAL SUMMARY
MELBOURNE WATER, WERRIBEE, VICTORIA

Analyte	Number of Samples	Minimum Concentration	Maximum Concentration	EIL (mg/kg)	Units
Boron	984	<50	70	*	mg/kg
Bromobenzene	33	<0.5	<0.5	*	mg/kg
Bromochloromethane	5	<0.5	<0.5	*	mg/kg
Bromodichloromethane	31	<0.5	<0.5	*	mg/kg
Bromoform	31	<0.5	<0.5	*	mg/kg
Bromomethane	31	<5	<5	*	mg/kg
Bromophos-ethyl	271	<0.05	<0.05	*	mg/kg
Butyl benzyl phthalate	43	<0.5	<0.5	*	mg/kg
C10-C14	816	<50	<50	*	mg/kg
C15-C28	816	<100	100	*	mg/kg
C29-C36	816	<100	100	*	mg/kg
C6-C9	482	<2	<2	*	mg/kg
Cadmium	988	<1	21	3	mg/kg
Carbazole	43	<0.5	<0.5	*	mg/kg
Carbon disulfide	21	<0.5	<0.5	*	mg/kg
Carbon tetrachloride	31	<0.5	<0.5	*	mg/kg
Carbophenothion	271	<0.05	<0.05	*	mg/kg
ChlordaneCis	437	<0.05	<0.05	*	mg/kg
ChlordaneTrans	437	<0.5	<0.5	*	mg/kg
Chlorfenvinphos	297	<0.05	<0.05	*	mg/kg
Chlorobenzene	33	<0.5	<0.5	*	mg/kg
Chlorobenzilate	33	<0.5	<0.5	*	mg/kg
Chlorodibromomethane	17	<0.5	<0.5	*	mg/kg
Chloroethane	31	<5	<5	*	mg/kg
Chloroform	31	<0.5	<0.5	*	mg/kg
Chloromethane	31	<5	<5	*	mg/kg
Chlorpyrifos	410	<0.05	<0.05	*	mg/kg
Chlorpyrifos-methyl	297	<0.05	<0.05	*	mg/kg
Chromium	1092	<2	21200	400	mg/kg
Chrysene	677	<0.5	<0.5	*	mg/kg
cis-1,2-dichloroethene	31	<0.5	<0.5	*	mg/kg
cis-1,3-dichloropropene	17	<0.5	<0.5	*	mg/kg
cis-1.3-Dichloropropylene	15	<0.5	<0.5	*	mg/kg
cis-1.4-Dichloro-2-butene	15	<0.5	<0.5	*	mg/kg
cis-Isosafrole	33	<0.5	<0.5	*	mg/kg
Cobalt	988	<2	44	*	mg/kg
Copper	1104	<5	6890	100	mg/kg
Coumaphos	113	<0.5	<0.5	*	mg/kg
Cyanide Total	41	<1	2	*	mg/kg
d-BHC	640	<0.05	<0.05	*	mg/kg
DDD	953	<0.05	<0.05	*	mg/kg
DDE	953	<0.05	0.9	*	mg/kg
DDT	953	<0.2	0.3	*	mg/kg
Decachlorobiphenyl	1	<0.1	<0.1	*	%
DEF	1	<0.1	<0.1	*	%
Demeton (total)	103	<1	<1	*	mg/kg
Demeton-O	10	<5	<5	*	mg/kg
Demeton-S-methyl	280	<0.05	<0.05	*	mg/kg
Diallate	32	<0.5	<0.5	*	mg/kg
Diazinon	409	<0.05	<0.05	*	mg/kg
Dibenz(a.h)anthracene	674	<0.5	<0.5	*	mg/kg
Dibenzofuran	42	<0.5	<0.5	*	mg/kg
Dibromochloromethane	14	<0.5	<0.5	*	mg/kg
Dibromo-DDE	0	<0.1	<0.1	*	%

TABLE 8
AREA 4 ANALYTICAL SUMMARY
MELBOURNE WATER, WERRIBEE, VICTORIA

Analyte	Number of Samples	Minimum Concentration	Maximum Concentration	EIL (mg/kg)	Units
Dibromomethane	30	<0.5	<0.5	*	mg/kg
Dichlorodifluoromethane	30	<5	<5	*	mg/kg
Dichlorvos	409	<0.05	<0.05	*	mg/kg
Dieldrin	652	<0.05	0.61	*	mg/kg
Diethyl phthalate	42	<0.5	<0.5	*	mg/kg
Dimethoate	409	<0.05	<0.05	*	mg/kg
Dimethyl phthalate	42	<0.5	<0.5	*	mg/kg
Dimethylaminoazobenzene	32	<0.5	<0.5	*	mg/kg
Di-n-butyl phthalate	42	<0.5	0.9	*	mg/kg
Di-n-octylphthalate	42	<0.5	<0.5	*	mg/kg
Dioxins - Total	10	1	45.27	*	pg/g
Diphenylamine	10	<1	<1	*	mg/kg
Disulfoton	113	<0.5	<0.5	*	mg/kg
E.coli	152	<1	<1	*	MPN/g
Endosulphan sulphate	652	<0.05	<0.05	*	mg/kg
Endrin	652	<0.05	<0.05	*	mg/kg
Endrin Aldehyde	674	<0.05	<0.05	*	mg/kg
Endrin Ketone	469	<0.05	<0.05	*	mg/kg
EPN	10	<0.5	<0.5	*	mg/kg
Ethion	296	<0.05	<0.05	*	mg/kg
Ethoprop	113	<0.5	<0.5	*	mg/kg
Ethyl Acetate	16	<0.5	<0.5	*	mg/kg
Ethylbenzene	283	<0.2	<0.2	*	mg/kg
Ethylene Glycol	0	<10	<10	*	mg/kg
Fenamiphos	270	<0.05	<0.05	*	mg/kg
Fensulfothion	10	<0.5	<0.5	*	mg/kg
Fenthion	411	<0.05	<0.05	*	mg/kg
Fluoranthene	676	<0.5	0.8	*	mg/kg
Fluorene	676	<0.5	<0.5	*	mg/kg
Fluoride	287	<40	930	*	mg/kg
gamma-BHC	652	<0.05	<0.05	*	mg/kg
Heptachlor	652	<0.05	<0.05	*	mg/kg
Heptachlor epoxide	652	<0.05	<0.05	*	mg/kg
Hepta-Dioxins	0	<1.25	<1.25	*	pg/g
Hepta-Furans	0	<1.25	<1.25	*	pg/g
Hexachlorobenzene (HCB)	883	<0.05	<0.05	*	mg/kg
Hexachlorobutadiene	72	<0.5	<0.5	*	mg/kg
Hexachlorocyclopentadiene	58	<2.5	<2.5	*	mg/kg
Hexachloroethane	58	<0.5	<0.5	*	mg/kg
Hexachloropropene	26	<0.5	<0.5	*	mg/kg
Hexachloropropylene	32	<0.5	<0.5	*	mg/kg
Hexa-Dioxins	0	<1.25	<1.25	*	pg/g
Hexa-Furans	0	<1.25	<1.25	*	pg/g
Hexavalent Chromium Soluble	208	<1	<1	*	mg/kg
HMX	24	<0.1	<0.1	*	mg/kg
Indeno(1,2,3,-cd)Pyrene	676	<0.5	<0.5	*	mg/kg
Iodomethane	14	<0.5	<0.5	*	mg/kg
Isophorone	42	<0.5	<0.5	*	mg/kg
Isopropylbenzene	24	<0.5	<0.5	*	mg/kg
Isosafrole	10	<0.5	<0.5	*	mg/kg
Lead	1061	<5	1240	600	mg/kg
m- & p-xylene	283	<0.2	<0.2	*	mg/kg
Malathion	409	<0.05	<0.05	*	mg/kg
Manganese	1027	<5	822	500	mg/kg

TABLE 8
AREA 4 ANALYTICAL SUMMARY
MELBOURNE WATER, WERRIBEE, VICTORIA

Analyte	Number of Samples	Minimum Concentration	Maximum Concentration	EIL (mg/kg)	Units
Mercury	1001	<0.1	0.8	1	mg/kg
Methanesulfonate ethyl	42	<0.5	<0.5	*	mg/kg
Methanesulfonate methyl	42	<0.5	<0.5	*	mg/kg
Methapyrilene	32	<0.5	<0.5	*	mg/kg
Methoxychlor	626	<0.2	<0.2	*	mg/kg
Mevinphos	113	<0.5	<0.5	*	mg/kg
Molybdenum	1007	<2	8	*	mg/kg
Monocrotophos	373	<0.2	<0.2	*	mg/kg
N-2-Fluorenyl Acetamide	32	<0.5	<0.5	*	mg/kg
Naled (Dibrom)	10	<0.5	<0.5	*	%
Naphthalene	675	<0.5	1.8	*	mg/kg
n-Butylbenzene	24	<0.5	<0.5	*	mg/kg
Nickel	1031	<2	120	60	mg/kg
Nitrate	94	<0.1	16	*	mg/kg
Nitrate + Nitrite	94	<0.1	16	*	mg/kg
Nitrite	94	<0.1	8.9	*	mg/kg
Nitrobenzene	80	<0.5	<0.5	*	mg/kg
Nitroglycerine	48	<1	<1	*	mg/kg
N-Nitrosodibutylamine	42	<0.5	<0.5	*	mg/kg
N-Nitrosodiethylamine	42	<0.5	<0.5	*	mg/kg
N-Nitrosodi-n-propylamine	42	<0.5	<0.5	*	mg/kg
N-Nitrosodiphenyl & Diphenylamine	32	<1	<1	*	mg/kg
N-Nitrosomethylethylamine	32	<0.5	<0.5	*	mg/kg
N-Nitrosomorpholine	42	<0.5	<0.5	*	mg/kg
N-Nitrosopiperidine	42	<0.5	<0.5	*	pH Unit
N-Nitrosopyrrolidine	42	<1	<1	*	mg/kg
n-Propylbenzene	24	<0.5	<0.5	*	mg/kg
OCDD	0	<5	<5	*	pg/g
OCDD (13C12)	0	<0.25	<0.25	*	pg/g
OCDF	0	<2.5	<2.5	*	pg/g
Octa-Dioxin	0	<5	<5	*	pg/g
Octa-Furan	0	<2.5	<2.5	*	pg/g
o-Dinitrobenzene	0	<0.1	<0.1	*	%
ortho-Xylene	283	<0.2	<0.2	*	mg/kg
o-toluidine	10	<0.5	<0.5	*	mg/kg
Parathion	382	<0.2	<0.2	*	mg/kg
Parathion-methyl	383	<0.2	<0.2	*	mg/kg
PCB Aroclor 1016	130	<0.5	<0.5	*	mg/kg
PCB Aroclor 1232	131	<0.5	<0.5	*	mg/kg
PCB Aroclor 1242	131	<0.5	<0.5	*	mg/kg
PCB Aroclor 1248	131	<0.5	<0.5	*	mg/kg
PCB Aroclor 1254	131	<0.5	<0.5	*	mg/kg
PCB Aroclor 1260	131	<0.5	<0.5	*	mg/kg
Pentachlorobenzene	58	<0.5	<0.5	*	mg/kg
Pentachloroethane	24	<0.5	<0.5	*	mg/kg
Pentachloronitrobenzene	42	<0.5	<0.5	*	mg/kg
Pentachlorophenol	558	<2	<2	*	mg/kg
Penta-Dioxins	0	<1.25	<1.25	*	pg/g
Penta-Furans	0	<1.25	<1.25	*	pg/g
PETN	48	<1	<1	*	mg/kg
pH	1046	<0.1	9.9	*	mg/kg
Phenacetin	42	<0.5	<0.5	*	mg/kg
Phenanthrene	676	<0.5	0.5	*	mg/kg
Phenol	557	<0.5	<0.5	*	mg/kg

TABLE 8
AREA 4 ANALYTICAL SUMMARY
MELBOURNE WATER, WERRIBEE, VICTORIA

Analyte	Number of Samples	Minimum Concentration	Maximum Concentration	EIL (mg/kg)	Units
Phenol-d6	0	<0.1	<0.1	*	%
Phorate	113	<0.5	<0.5	*	mg/kg
Pirimphos-ethyl	296	<0.05	<0.05	*	mg/kg
p-Isopropyltoluene	24	<0.5	<0.5	*	mg/kg
Profenofos	10	<0.5	<0.5	*	mg/kg
Pronamide	32	<0.5	<0.5	*	mg/kg
Prothiofos	408	<0.05	<0.05	*	mg/kg
Pyrene	676	<0.5	0.8	*	mg/kg
RDX	24	<0.1	<0.1	*	mg/kg
Ronnel	113	<0.5	<0.5	*	mg/kg
Safrole	42	<0.5	<0.5	*	mg/kg
sec-Butylbenzene	24	<0.5	<0.5	*	mg/kg
Selenium	1007	<5	2	*	mg/kg
Silver	6	<2	<2	*	mg/kg
Stirofos	112	<0.5	<0.5	*	mg/kg
Styrene	24	<0.5	<0.5	*	mg/kg
Sulfotepp	12	<0.5	2	*	mg/kg
Sulphate as SO4 2-	12	<50	<50	2000	mg/kg
tert-Butylbenzene	24	<0.5	<0.5	*	mg/kg
Tetrachloroethene	30	<0.5	<0.5	*	mg/kg
Tetra-Dioxins	2	1	1	*	pg/g
Tetra-Furans	0	<0.25	<0.25	*	pg/g
Tetryl	48	<0.1	<0.1	*	mg/kg
Tin	1007	<5	15	*	mg/kg
Toluene	283	<0.2	<0.2	*	mg/kg
Toluene-D8	0	<0.1	<0.1	*	%
Total Cyanide	142	<1	2	*	mg/kg
Total Polychlorinated biphenyls	223	<0.1	<0.1	*	mg/kg
trans-1,2-dichloroethene	32	<0.5	1	*	mg/kg
trans-1,3-dichloropropene	30	<0.5	<0.5	*	mg/kg
trans-1.4-Dichloro-2-butene	16	<0.5	1	*	mg/kg
trans-Isosafrole	32	<0.5	<0.5	*	mg/kg
Tributylmethylether (TBME)	16	<0.5	<0.5	*	mg/kg
Trichloroethene	30	<0.5	<0.5	*	mg/kg
Trichlorofluoromethane	30	<5	<5	*	mg/kg
Trichloronate	12	<0.5	1	*	mg/kg
Vanadium	1005	<5	125	50	mg/kg
Vinyl Acetate	20	<5	<5	*	mg/kg
Vinyl Chloride	30	<5	<5	*	mg/kg
Zinc	987	<5	1000	200	mg/kg

TABLE 9
AREA 4B, 4C, 4D & 4H EXCEEDENCES
HIL AND EIL EXCEEDENCES
MELBOURNE WATER, WERRIBEE, VICTORIA

SAMPLE ID	ANALYTE	VALUE (mg/kg)	NEPM HIL (mg/kg)	NEPM EIL (mg/kg)
4B/G2/0.1	Manganese	700		500
4B/G2/0.1	Nickel	120		60
4B/G3/0.1	Manganese	700		500
4B/G4/0.1	Manganese	550		500
4B/G4/0.1	Nickel	74		60
4B/G3/0.1	Nickel	110		60
4B/G13/1.0	Chromium	4690	100	
4B/G13/1.0	Copper	1900	1000	
4B/G13/1.0	Arsenis	3120	100	
4B/G17/0.25	Arsenic	61		20
4B/G18/0.25	Arsenic	25		20
4B/G18/0.25	Manganese	590		500
4B/G19/0.1	Manganese	760		500
4B/G19/0.1	Nickel	120		60
4B/G28A/0.25	Arsenic	140	100	
4B/G28A/0.25	Arsenic	140		20
4B/G28A/0.25	Chromium	170	100	
4B/G28A/0.25	Copper	73		60
4B/G28A/0.25	Zinc	730		200
4B/G29/1.0	Zinc	320		200
4B/G34/0.1	Manganese	680		500
4B/G34/0.1	Nickel	110		60
4B/G4/0.1	Arsenic	28		20
4B/T12/0.25	Arsenic	31		20
4B/T12/0.25	Barium	450		400
4B/T14/0.25	Arsenic	24		20
4B/T15/0.25	Arsenic	45		20
4B/T15/0.25	Chromium	101	100	
4B/T16/1.0	Manganese	622		500
4B/T18/0.25	Arsenic	144	100	
4B/T18/0.25	Arsenic	144		20
4B/T18/0.25	Chromium	210	100	
4B/T18/0.25	Copper	107		60
4B/T20/0.25	Arsenic	79		20
4B/T20/0.25	Chromium	131	100	
4B/T20/0.25	Copper	67		60
4B/T21/0.25	Arsenic	126	100	
4B/T21/0.25	Arsenic	126		20
4B/T21/0.25	Chromium	136	100	
4B/T21/0.25	Copper	104		60
4B/T21/0.5	Arsenic	45		20
4B/T22/0.25	Manganese	591		500
4B/T43/0.1	Manganese	585		500
4B/T43/0.1	Nickel	105		60
4B/T43/0.25	Manganese	509		500
4B/T44/0.1	Manganese	604		500
4B/T44/0.1	Nickel	106		60
4B/T45/0.1	Manganese	583		500

TABLE 9
AREA 4B, 4C, 4D & 4H EXCEEDENCES
HIL AND EIL EXCEEDENCES
MELBOURNE WATER, WERRIBEE, VICTORIA

SAMPLE ID	ANALYTE	VALUE (mg/kg)	NEPM HIL (mg/kg)	NEPM EIL (mg/kg)
4B/T45/0.1	Nickel	95		60
4B/T48/0.10	Antimony	342		20
4B/T48/0.10	Arsenic	29900	100	
4B/T48/0.10	Arsenic	29900		20
4B/T48/0.10	Chromium	21200	100	
4B/T48/0.10	Chromium	21200		400
4B/T48/0.10	Copper	6890	1000	
4B/T48/0.10	Copper	6890		60
4B/T48/0.25	Arsenic	43		20
4B/T48/0.25	Chromium	148	100	
4B/T48/0.25	Copper	86		60
4B/T48/0.5	Arsenic	122	100	
4B/T48/0.5	Arsenic	122		20
4B/T48/0.5	Chromium	110	100	
4B/T48/0.5	Copper	65		60
4B/T49/0.05	Arsenic	56		20
4B/T49/0.10	Arsenic	71		20
4B/T49/0.20	Arsenic	77		20
4B/T49/0.25	Arsenic	84		20
4B/T49/0.30	Arsenic	122	100	
4B/T49/0.30	Arsenic	122		20
4B/T49/0.30	Chromium	124	100	
4B/T49/0.30	Copper	62		60
4B/T49/0.40	Arsenic	127	100	
4B/T49/0.40	Arsenic	127		20
4B/T49/0.40	Chromium	104	100	
4B/T49/0.50	Arsenic	79		20
4B/T50/0.05	Arsenic	412	100	
4B/T50/0.05	Arsenic	412		20
4B/T50/0.05	Chromium	513	100	
4B/T50/0.05	Chromium	513		400
4B/T50/0.05	Copper	332		60
4B/T50/0.10	Arsenic	148	100	
4B/T50/0.10	Arsenic	148		20
4B/T50/0.10	Chromium	121	100	
4B/T50/0.10	Copper	114		60
4B/T50/0.20	Arsenic	132	100	
4B/T50/0.20	Arsenic	132		20
4B/T50/0.20	Chromium	137	100	
4B/T50/0.20	Copper	100		60
4B/T50/0.30	Arsenic	57		20
4B/T50/0.40	Arsenic	300	100	
4B/T50/0.40	Arsenic	300		20
4B/T50/0.40	Chromium	392	100	
4B/T50/0.40	Copper	279		60
4B/T50/0.50	Arsenic	46		20
4B/T50/1.00	Arsenic	26		20
4B/T51/0.05	Arsenic	105	100	

TABLE 9
AREA 4B, 4C, 4D & 4H EXCEEDENCES
HIL AND EIL EXCEEDENCES
MELBOURNE WATER, WERRIBEE, VICTORIA

SAMPLE ID	ANALYTE	VALUE (mg/kg)	NEPM HIL (mg/kg)	NEPM EIL (mg/kg)
4B/T51/0.05	Arsenic	105		20
4B/T51/0.05	Chromium	127	100	
4B/T51/0.05	Copper	94		60
4B/T51/0.10	Arsenic	140	100	
4B/T51/0.10	Arsenic	140		20
4B/T51/0.10	Chromium	148	100	
4B/T51/0.10	Copper	87		60
4B/T51/0.20	Arsenic	83		20
4B/T51/0.20	Chromium	134	100	
4B/T51/0.20	Copper	72		60
4B/T51/0.30	Arsenic	126	100	
4B/T51/0.30	Arsenic	126		20
4B/T51/0.30	Chromium	148	100	
4B/T51/0.30	Copper	97		60
4B/T51/0.40	Arsenic	29		20
4B/T52/0.05	Arsenic	32		20
4B/T52/0.10	Arsenic	45		20
4B/T52/0.20	Arsenic	29		20
4B/T52/0.30	Arsenic	47		20
4B/T54/0.05	Arsenic	125	100	
4B/T54/0.05	Arsenic	125		20
4B/T54/0.05	Chromium	215	100	
4B/T54/0.05	Copper	90		60
4B/T54/0.10	Arsenic	78		20
4B/T54/0.10	Chromium	134	100	
4B/T54/0.10	Copper	74		60
4B/T54/0.20	Arsenic	32		20
4B/T54/0.30	Arsenic	21		20
4B/T54/0.40	Arsenic	29		20
4B/T55/0.05	Arsenic	254	100	
4B/T55/0.05	Arsenic	254		20
4B/T55/0.05	Chromium	308	100	
4B/T55/0.05	Copper	152		60
4B/T55/0.10	Arsenic	164	100	
4B/T55/0.10	Arsenic	164		20
4B/T55/0.10	Chromium	160	100	
4B/T55/0.10	Copper	111		60
4B/T55/0.20	Arsenic	35		20
4B/T56/0.05	Arsenic	59		20
4B/T56/0.05	Chromium	111	100	
4B/T56/0.10	Arsenic	82		20
4B/T56/0.10	Chromium	174	100	
4B/T56/0.20	Arsenic	47		20
4B/T57/0.25	Arsenic	210	100	
4B/T57/0.25	Arsenic	210		20
4B/T57/0.25	Chromium	270	100	
4B/T57/0.25	Copper	140		60
4B/T57/0.5	Arsenic	24		20

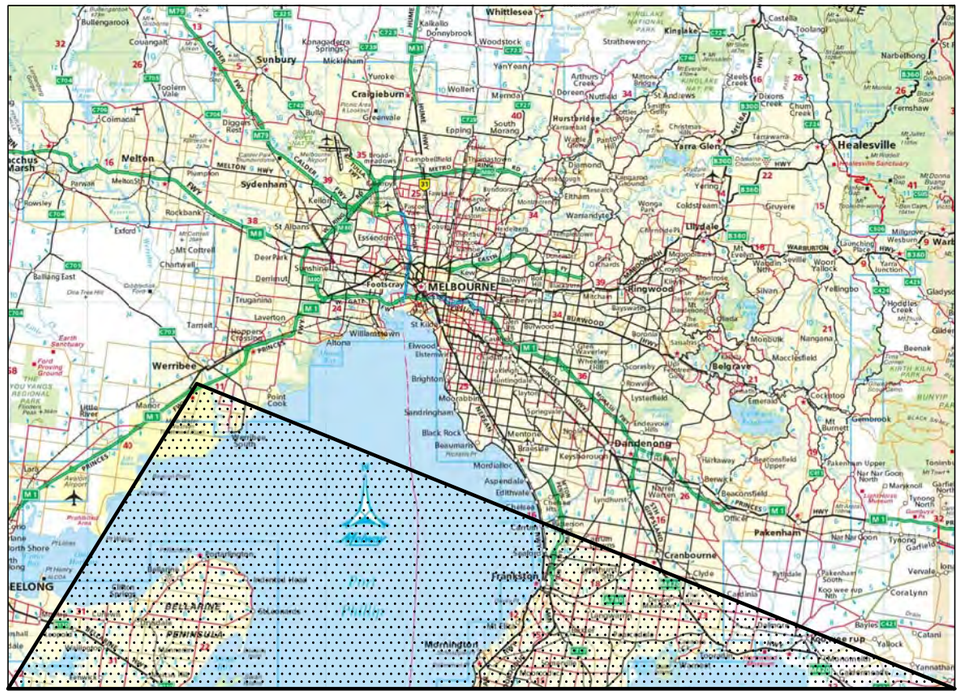
TABLE 9
AREA 4B, 4C, 4D & 4H EXCEEDENCES
HIL AND EIL EXCEEDENCES
MELBOURNE WATER, WERRIBEE, VICTORIA

SAMPLE ID	ANALYTE	VALUE (mg/kg)	NEPM HIL (mg/kg)	NEPM EIL (mg/kg)
4B/T57/0.5	Chromium	110	100	
4B/T57/1.0	Arsenic	29		20
4B/T58/0.25	Arsenic	1310	100	
4B/T58/0.25	Arsenic	1310		20
4B/T58/0.25	Chromium	1060	100	
4B/T58/0.25	Chromium	1060		400
4B/T58/0.25	Copper	480		60
4B/T6/1.0	Manganese	538		500
4B/T7/0.5	Arsenic	22		20
4B/T8/0.25	Arsenic	119	100	
4B/T8/0.25	Arsenic	119		20
4B/T8/0.25	Chromium	223	100	
4B/T9/0.25	Arsenic	99		20
4B/T9/0.25	Copper	73		60
4B/T9/0.5	Manganese	561		500
4C/G5/0.7	Zinc	330		200
4C/G50/0.5	Barium	580		400
4C/T14/0.5	Barium	430		400
4C/T6/0.25	Zinc	228		200
4C/T7/0.25	Chromium	132	100	
4C/T7/0.25	Copper	75		60
4C/T7/0.25	Dieldrin	0.25		0.2
4D/G102/0.25	Manganese	810		500
4D/G18/0.5	Barium	420		400
4D/G211/0.5	Barium	680		400
4D/G228/0.25	Manganese	610		500
4D/G234/0.5	Barium	730		400
4D/G247/0.1	Manganese	720		500
4D/G247/0.1	Nickel	110		60
4D/G40/0.25	Manganese	513		500
4D/T6/0.25	Cadmium	21	20	
4D/T6/0.25	Cadmium	21		3
4D/T6/0.25	Zinc	340		200
4E/G13/0.15	Manganese	610		500
4E/G13/0.15	Nickel	100		60
4E/G18/0.1	Manganese	550		500
4E/G31/0.25	Chromium	170	100	
4E/G34/0.25	Manganese	570		500
4E/T14/0.25	Manganese	546		500
4E/T2/0.25	Manganese	822		500
4E/T28/0.5	Copper	68		60
4E/T28/0.5	Zinc	398		200
4E/T5/1.0	Manganese	618		500
4E/T5/1.0	Nickel	97		60
4F/G13/0.5	Manganese	760		500
4F/G18/0.5	Manganese	550		500
4F/G27/0.5	Barium	420		400
4H/T12/0.25	Lead	1240	300	

TABLE 9
AREA 4B, 4C, 4D & 4H EXCEEDENCES
HIL AND EIL EXCEEDENCES
MELBOURNE WATER, WERRIBEE, VICTORIA

SAMPLE ID	ANALYTE	VALUE (mg/kg)	NEPM HIL (mg/kg)	NEPM EIL (mg/kg)
4H/T12/0.25	Lead	1240		600
4H/T17/0.25	Lead	396	300	
4H/T63/0.5	Dieldrin	0.61		0.2
4H/T63/0.5	Lead	348	300	
4H/T63/0.5	Zinc	691		200
4H/T64/1.0	Dieldrin	0.26		0.2
4H/T64/1.0	Zinc	1000		200

Notes: Light grey shading indicates concentrations above NEPM HIL 'A' criteria.



REGIONAL MAP

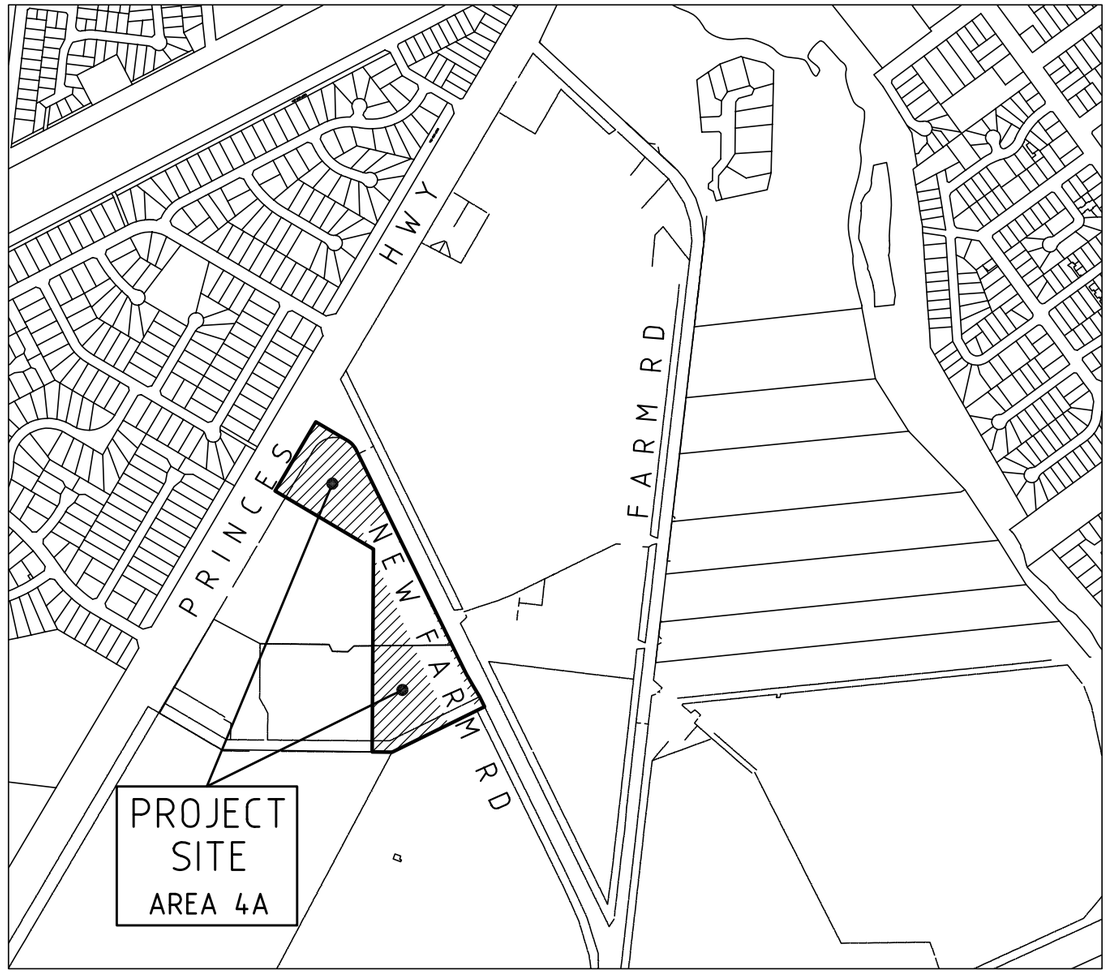
NOT TO SCALE

LOCALITY MAP

METRES

0 100 200 300 400 500 1000

APPROXIMATE SCALE ONLY



VICINITY MAP

METRES

0 50 100 150 300m

APPROXIMATE SCALE ONLY

ISSUE	DATE	AMENDMENTS	DRN	CKD
02	11.12.07	CHANGES TO TITLEBLOCK	REM	EB
01	10.11.05	ORIGINAL ISSUE	PR	TSA

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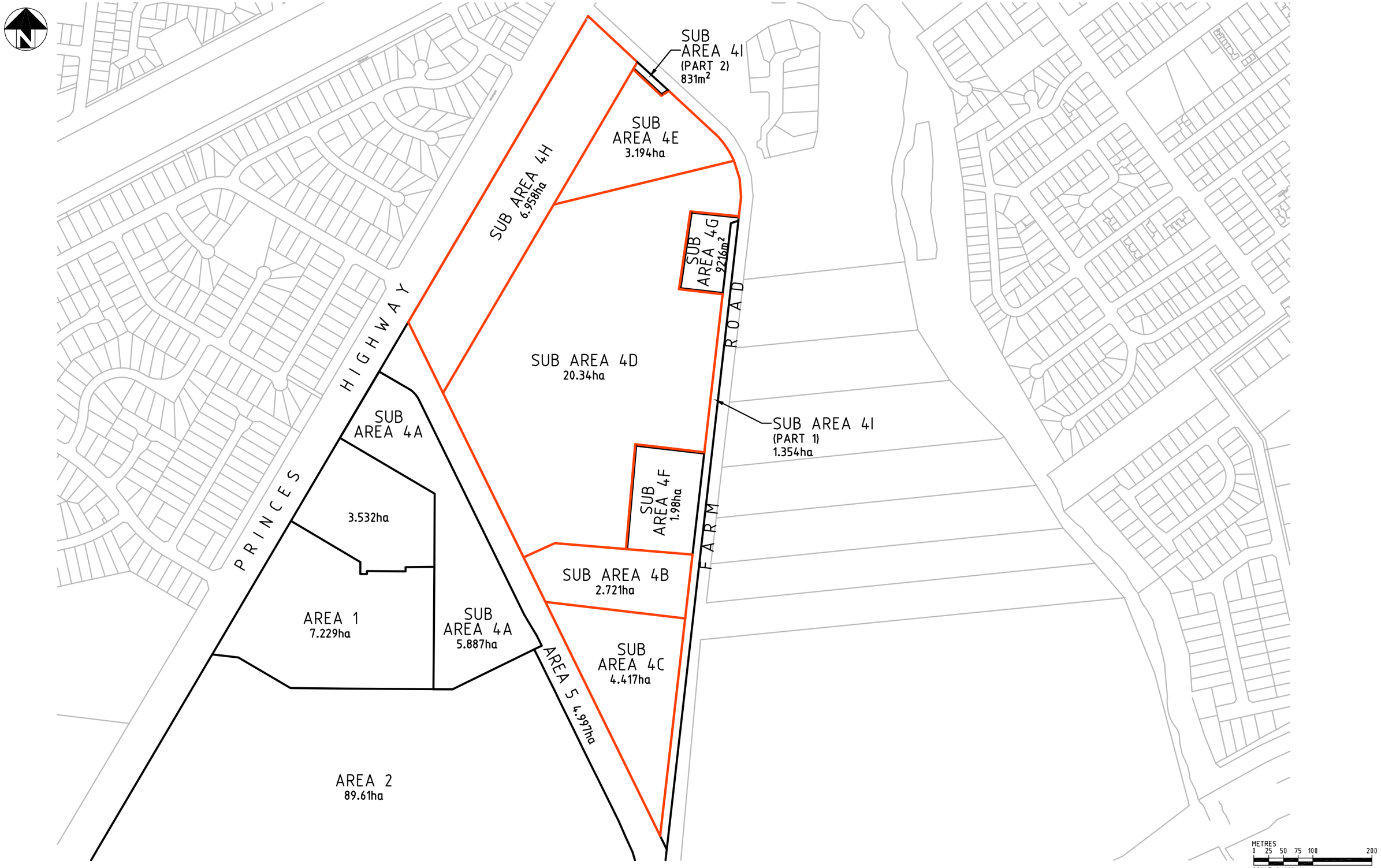
REGIONAL & VICINITY MAPS

SAMPLING ANALYSIS PLAN 4A

MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE	DRAWN	DATE	CHECKED	APPROVED	FIG No:
A3	PR	10.11.05			FIGURE 1
	REV: 02	DWG NAME: 3106004F504			



ISSUE	DATE	AMENDMENTS	DRN	CKD
01	19.02.08	ORIGINAL ISSUE	REM	EB

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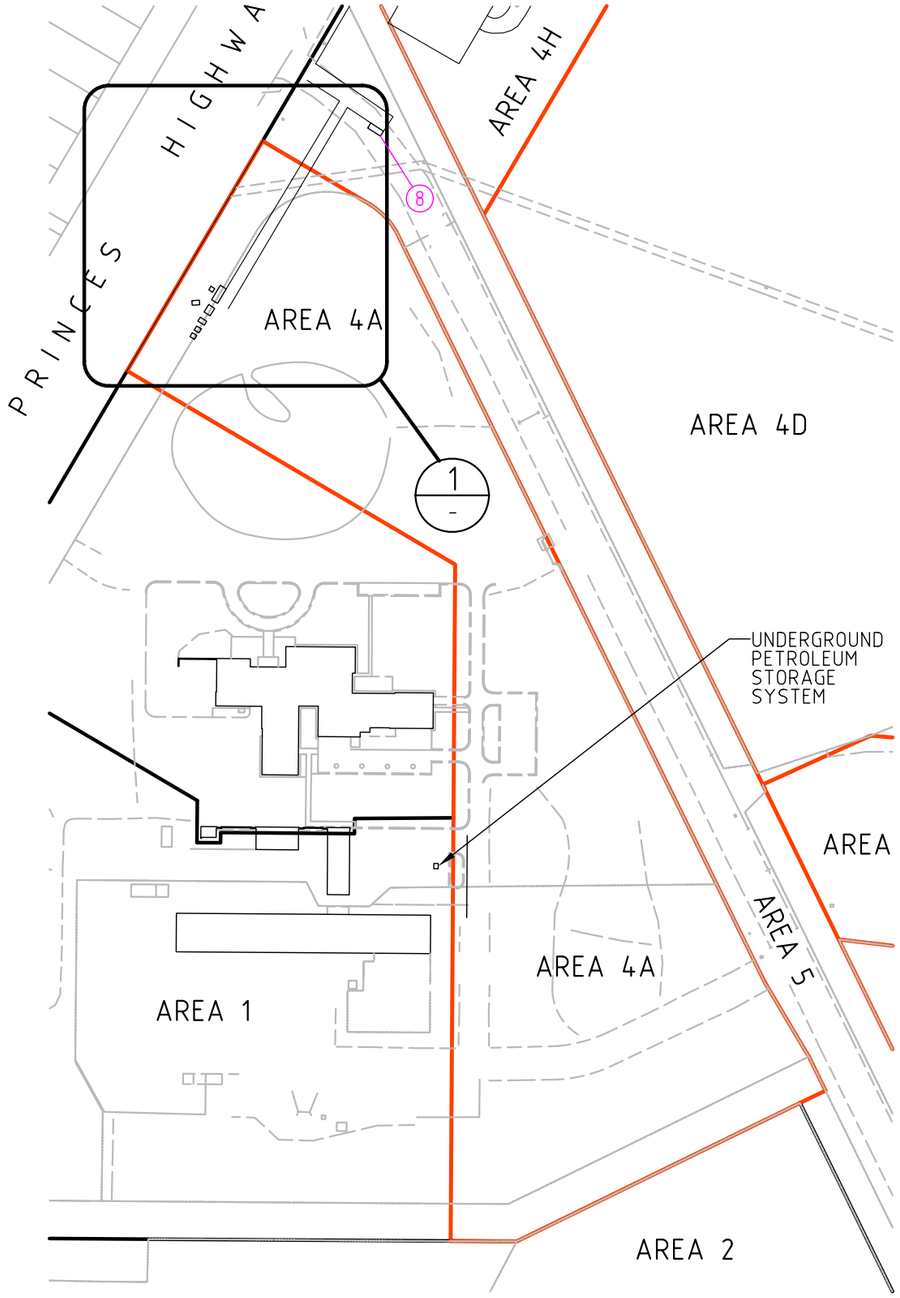
WERRIBEE AREA 4 SITE MAP

SAMPLING ANALYSIS PLAN AREA 4A

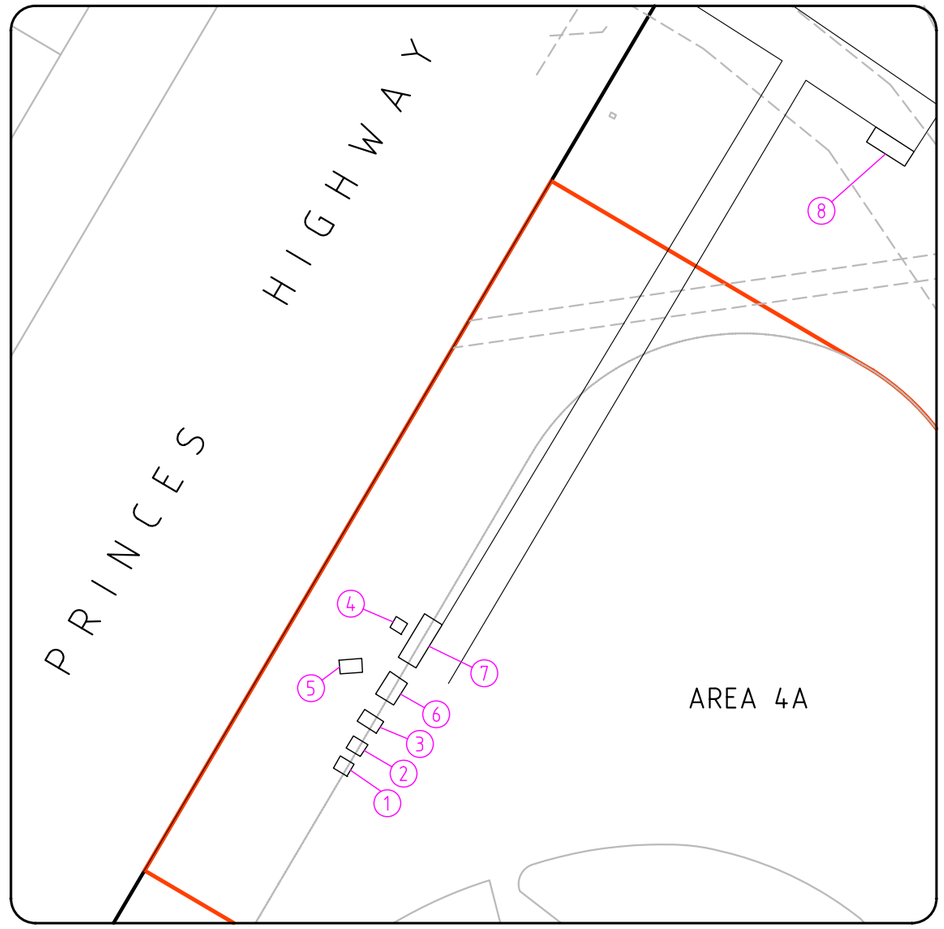
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE	DRAWN	DATE	CHECKED	APPROVED	FIG No:
A3	REM	19.02.08			FIGURE 2
	REV: 01	DWG NAME: 3106004F600			



AREA 4A SITE PLAN

METRES
0 10 20 30 40 50 100
SCALE 1:3000



DETAIL 1 -

METRES
0 5 10 15 30
SCALE 1:1000

LEGEND

- INDICATES BUILDINGS
- AREA BOUNDARY

INFRASTRUCTURE KEY

1. LATRINE
2. ABLUTIONS
3. WORKSHOP (PORTABLE)
4. UNDERGROUND SEPTIC TANK
5. SLEEPING HUT
6. SLEEPING HUT
7. OFFICERS ANTE-ROOM
8. UNDERGROUND PETROLEUM STORAGE SYSTEM

ISSUE	DATE	AMENDMENTS	DRN	CKD
01	11.12.07	ORIGINAL ISSUE	REM	EB

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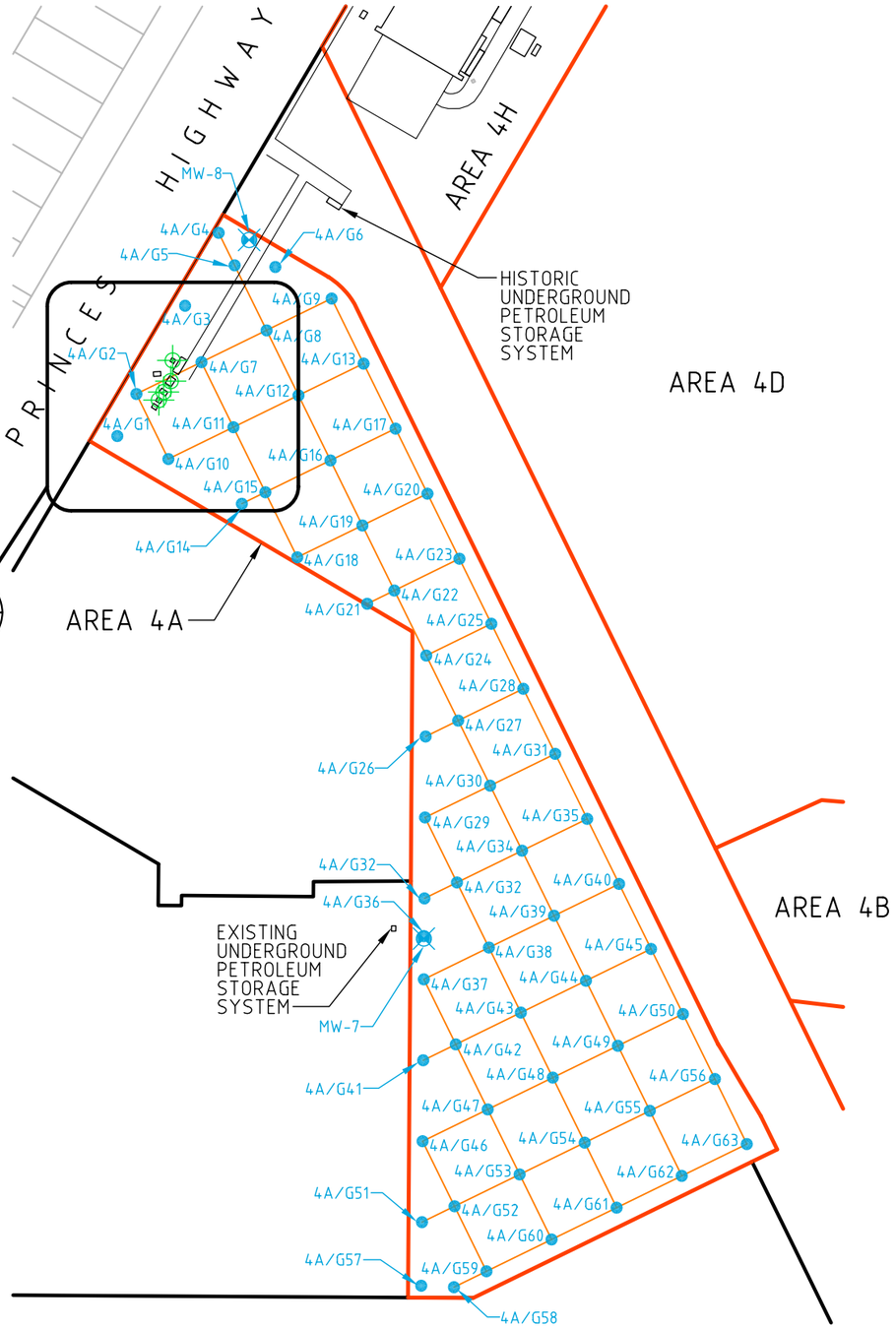
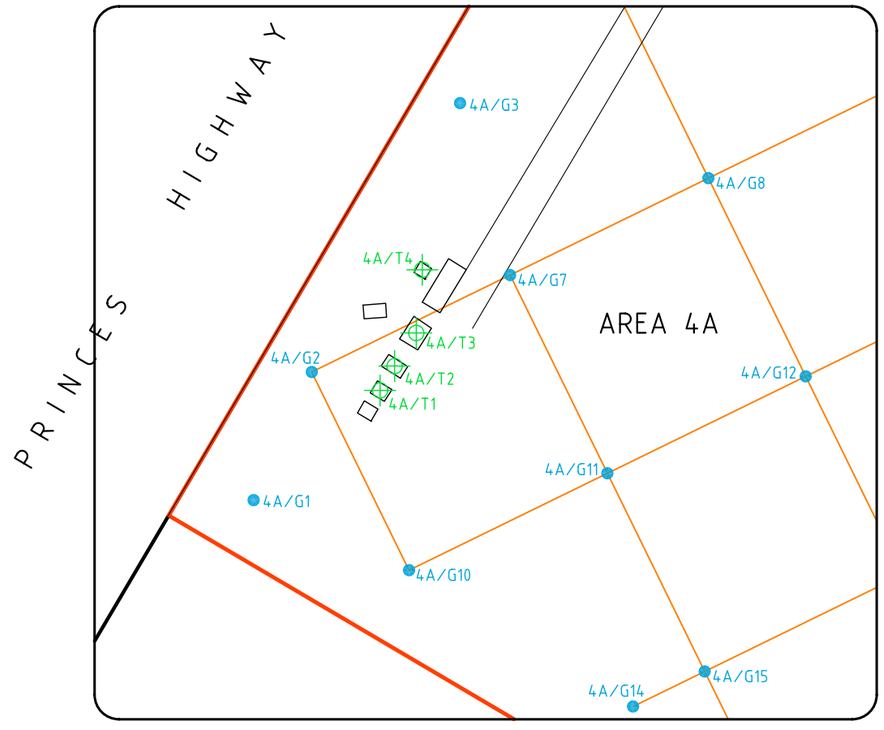
HISTORICAL SITE INFRASTRUCTURE
SAMPLING ANALYSIS PLAN 4A
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE	DRAWN	DATE	CHECKED	APPROVED	FIG No:
A3	REM	11.12.07			FIGURE 3
	REV: 01	DWG NAME: 3106004F506			



AREA 4A SITE PLAN

METRES
0 10 20 30 40 50 100
SCALE 1:3000



DETAIL 1 / -

METRES
0 5 10 15 30
SCALE 1:1000

LEGEND

- MW-# MONITORING WELL
- 4A/G# TARGET TEST PIT
- 4A/T# GRID TEST PIT
- GRID LOCATION
- AREA BOUNDARIES

ISSUE	DATE	AMENDMENTS	DRN	CKD
01	11.12.07	ORIGINAL ISSUE	REM	EB

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PROPOSED GRID & TARGET SAMPLE LOCATIONS
SAMPLING ANALYSIS PLAN 4A
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE	DRAWN	DATE	CHECKED	APPROVED	FIG No:
A3	REM	11.12.07			FIGURE 4
	REV: 01	DWG NAME: 3106004F507			

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Item	Section	Page	Comments
5.	Table 2	7	The descriptions in Table 2 do not reflect paragraph 4, which states 'Table 2 indicates the division between Sub-Area 4B and the rest of the site'. Please explain Table 2.
6.	Section 2.2.4	10	Please provide the list of metals analysed under the metals suite of analytes.
7.	Table 4	11	Please clarify the analytes selected for metals and full Vic EPA screen.
8.	Sections 4.1.1 and 4.1.2	13	We note the nominal sampling plan for sample locations and sample depth intervals. However we expect that additional samples will be collected at changes in lithology or potential soil contamination is observed. In addition, sufficient samples should be collected from natural soils for site characterisation.
9.	Section 5.1.1	17	Please undertake field screening (PID) for all soil samples.

Table 2 Sub-area 4I SAP Review and Comments

Item	Section	Page	Comments
1.	Section 9 – second and third paragraphs	11	The last sentence of the second paragraph states 'They [arsenic and chromium] are not expected to be found in Sub-Area 4I; as the timber treatment tracks did not extend into the area there is no associated use of Copper, Chrome and Arsenic (CCA)'. Although it appears that chromium and arsenic are unlikely to be elevated in Area 4I, it is advised that soil samples collected from grid locations within sub-area 4I that are adjacent to (or down gradient of) Sub-Area 4B be analysed for chromium speciation and/or arsenic lechability should there be exceedances of the respective investigation levels (ILs). This will provide evidence to further support the abovementioned statement.
2.	Section 9	12	Please provide the list of metals analysed under the metals suite of analytes.
3.	Section 10.2	14	The SAP states that 25 locations on a grid pattern will be used to assess the specific area of concern. Based on AS 4482.1-2005, Appendix E, we calculate 30 locations on a grid pattern to be required as a minimum. Please clarify the number of grid sample locations required to comply with AS 4482.1 – 2005 or the basis for reduced sampling.
4.	Section 10.3	15	The final sentence in Section 10.3 states that 'the trench will be continued to 1m BGS to allow visual assessment of natural soils. Will all test pits be excavated to natural soils as well? Sufficient samples should be collected from natural soils for site characterisation.

Should you have any questions regarding the comments, please do not hesitate to contact me on (03) 8687 8891

Regards

Julie Hood
Environmental Scientist

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22 February 2008

To	OTEK Australia Pty Ltd	Fax	(03) 9593 8555
Attention	Mr Tom Santwyk-Anderson		
From	Julie Hood	GHD tel	03 8687 8891
Email	julie.hood@ghd.com.au	GHD fax	8687 8111
Project	Audit Area 4A		
Subject	Auditor's Review of SAP for Detailed Site Investigation - 4A and 4I		
Total no. of pages	2	Job no.	31/11575/00

Tom,

We have reviewed Otek's workplans entitled "Sub-Area 4A Sampling and Analysis Plan for Detailed Site Investigation" and "Sub-Area 4I Sampling and Analysis Plan for Detailed Site Investigation" dated January 2008. As advised, Dr Fouad Abo is overseas until 11 March 2008 and has not reviewed the work plans. Please refer to our comments on the respective sub-areas sampling and analysis plan (SAP) outlined in Table 1 and Table 2. Please be aware that Fouad may have additional comments when he returns.

Table 1 Sub-area 4A SAP Review and Comments

Item	Section	Page	Comments
1.	Section 1.3	2	For completeness, please note that the Australian Standard AS4482.1 is 2005 not 1997.
2.	Table 1	6	Please advise what analytes are included in the metals, SVOC and Full Vic EPA screens.
3.	2.2.1	6	The SAP states that a 'reduced suite of analytes would be sufficient for the grid samples of Sub-Area 4A'. We have not seen all the results of all the work you have completed for Area 4. It is difficult to verify whether a reduced analytical suite is appropriate without reviewing the sampling analytical data for the adjacent boundary of Area 1 and Area 4 (particularly sub-areas 4B, 4C, 4D and 4H). To support this proposed reduced analytical program, please provide a summary of the analytical results that exceed relevant criteria on Area 1 and Area 4. A summary table presenting the following information would be useful for our review of the SAP: area, relevant site history, total number of samples analysed, concentration range for analytes, number of samples containing analytes above relevant criteria and a brief reason for exceedances.
4.	Section 2.2.2 – third paragraph onwards	7	We note that reference made to 'Table 2' does not list the analytes which exceeded the criteria values across samples already taken on the site. Based on the content of the above paragraph, is Otek referring to Table 6? We note that the explanations given in the third and fourth paragraphs seemed confusing. Please review and incorporate our comments outlined in item 3 to address this.

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22 February 2008

To	OTEK Australia Pty Ltd	Fax	(03) 9593 8555
Attention	Mr Tom Santwyk-Anderson		
From	Julie Hood	GHD tel	03 8687 8891
Email	julie.hood@ghd.com.au	GHD fax	8687 8111
Project	Audit Area 4A		
Subject	Auditor's Review of SAP for Detailed Site Investigation - 4A and 4I		
Total no. of pages	2	Job no.	31/11575/00

Tom,

We have reviewed Otek's workplans entitled "Sub-Area 4A Sampling and Analysis Plan for Detailed Site Investigation" and "Sub-Area 4I Sampling and Analysis Plan for Detailed Site Investigation" dated January 2008. As advised, Dr Fouad Abo is overseas until 11 March 2008 and has not reviewed the work plans. Please refer to our comments on the respective sub-areas sampling and analysis plan (SAP) outlined in Table 1 and Table 2. Please be aware that Fouad may have additional comments when he returns.

Table 1 Sub-area 4A SAP Review and Comments

Item	Section	Page	Comments
1.	Section 1.3	2	For completeness, please note that the Australian Standard AS4482.1 is 2005 not 1997.
2.	Table 1	6	Please advise what analytes are included in the metals, SVOC and Full Vic EPA screens.
3.	2.2.1	6	The SAP states that a 'reduced suite of analytes would be sufficient for the grid samples of Sub-Area 4A'. We have not seen all the results of all the work you have completed for Area 4. It is difficult to verify whether a reduced analytical suite is appropriate without reviewing the sampling analytical data for the adjacent boundary of Area 1 and Area 4 (particularly sub-areas 4B, 4C, 4D and 4H). To support this proposed reduced analytical program, please provide a summary of the analytical results that exceed relevant criteria on Area 1 and Area 4. A summary table presenting the following information would be useful for our review of the SAP: area, relevant site history, total number of samples analysed, concentration range for analytes, number of samples containing analytes above relevant criteria and a brief reason for exceedances.
4.	Section 2.2.2 – third paragraph onwards	7	We note that reference made to 'Table 2' does not list the analytes which exceeded the criteria values across samples already taken on the site. Based on the content of the above paragraph, is Otek referring to Table 6? We note that the explanations given in the third and fourth paragraphs seemed confusing. Please review and incorporate our comments outlined in item 3 to address this.

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Item	Section	Page	Comments
5.	Table 2	7	The descriptions in Table 2 do not reflect paragraph 4, which states 'Table 2 indicates the division between Sub-Area 4B and the rest of the site'. Please explain Table 2.
6.	Section 2.2.4	10	Please provide the list of metals analysed under the metals suite of analytes.
7.	Table 4	11	Please clarify the analytes selected for metals and full Vic EPA screen.
8.	Sections 4.1.1 and 4.1.2	13	We note the nominal sampling plan for sample locations and sample depth intervals. However we expect that additional samples will be collected at changes in lithology or potential soil contamination is observed. In addition, sufficient samples should be collected from natural soils for site characterisation.
9.	Section 5.1.1	17	Please undertake field screening (PID) for all soil samples.

Table 2 Sub-area 4l SAP Review and Comments

Item	Section	Page	Comments
1.	Section 9 – second and third paragraphs	11	The last sentence of the second paragraph states 'They [arsenic and chromium] are not expected to be found in Sub-Area 4l; as the timber treatment tracks did not extend into the area there is no associated use of Copper, Chrome and Arsenic (CCA)'. Although it appears that chromium and arsenic are unlikely to be elevated in Area 4l, it is advised that soil samples collected from grid locations within sub-area 4l that are adjacent to (or down gradient of) Sub-Area 4B be analysed for chromium speciation and/or arsenic lechability should there be exceedances of the respective investigation levels (ILs). This will provide evidence to further support the abovementioned statement.
2.	Section 9	12	Please provide the list of metals analysed under the metals suite of analytes.
3.	Section 10.2	14	The SAP states that 25 locations on a grid pattern will be used to assess the specific area of concern. Based on AS 4482.1-2005, Appendix E, we calculate 30 locations on a grid pattern to be required as a minimum. Please clarify the number of grid sample locations required to comply with AS 4482.1 – 2005 or the basis for reduced sampling.
4.	Section 10.3	15	The final sentence in Section 10.3 states that 'the trench will be continued to 1m BGS to allow visual assessment of natural soils. Will all test pits be excavated to natural soils as well? Sufficient samples should be collected from natural soils for site characterisation.

Should you have any questions regarding the comments, please do not hesitate to contact me on (03) 8687 8891

Regards

Julie Hood
Environmental Scientist

Richard Evans

Subject: FW: Riverwalk - Sub-Areas 4A & 4I Sample and Analysis Plans
Attachments: 145076.pdf

From: Julie.Hood@ghd.com.au [mailto:Julie.Hood@ghd.com.au]
Sent: Thursday, 10 April 2008 2:48 PM
To: Tom Santwyk-Anderson
Cc: 'Charlie Barber'; 'Christian Beasley'; Fouad.Abo@ghd.com.au; Lee.Gedge@ghd.com.au; 'Timm Kurth'
Subject: RE: Riverwalk - Sub-Areas 4A & 4I Sample and Analysis Plans

Hi Tom,

We have reviewed Otek's revised Werribee Fields Area 4A and 4I Sampling Analysis Plans. Based on my discussions with Fouad yesterday, we provide the following comments:

- **Target Soil Sampling**

The Area 4A SAP indicated that the target sampling program for Area 4A will be undertaken via test pits. If possible, it is suggested that trenching be undertaken to gain a good appreciation of the soil profile and assist in identifying any former infrastructure in the area.

According to Table 4 of SAP Sub-Area 4A, the Former UPSS and Existing UPSS Areas refer to 1 soil bore to 15m and 1 groundwater well to 15m. It appears that there is an error in this table. Does Otek intend to drill a soil bore and a separate groundwater well to a depth of 15 metres, or will the soil bore be converted to a groundwater well? Please clarify.

- **Grid Soil Sampling**

A case has been presented to reduce the analytical program across Sub Area 4A and 4I for grid based sampling. We acknowledge that elevated metals across Area 4 are the predominant issue, however it is suggested that adequate characterisation (using a broad analytical program) of the soils across each sub area be maintained. We suggest the following amendments to the proposed analytical program:
- 5% of samples be tested for a EPAV screen (as defined by the SAPs)
-50% of samples be tested for total petroleum hydrocarbons and polycyclic aromatic hydrocarbons
- 25% of samples be tested for organophosphate
- 25% of samples be tested for pH
- 50% of samples be tested for asbestos. However, in areas where asbestos is likely to be present, increase this sampling density accordingly.

- **Characterisation of natural soils**

Both SAPs indicated that all test pits will be excavated until natural soils are intersected. However, natural soil samples will only be analysed should elevated concentrations be reported in the shallow soil (0.25) sample. It is suggested that 25% of all natural depth samples be analysed for the grid sampling analytical suite to provide sufficient data to characterise the natural soils across each area. The testing program for natural soil samples should reflect the analytical program of the shallow soil sample at that location.

- **Composite Sampling**

Based on my conversation with you this morning, it is understood that three part composites are being collected across Area 4A and 4I. Neither SAP indicated that composite sampling would be undertaken. It is understood that the nature of the composite sampling program is similar to previous investigation sampling programs for the project.

- **Groundwater**

A groundwater investigation program has been implemented across the Werribee Fields Project. Does Otek intend to install groundwater wells (separate to those proposed for the UPSS infrastructure) on Sub Areas 4A and 4I?

Should you have any questions, please do not hesitate to contact me on 03 8687 8891.

Julie Hood
Environmental Scientist

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"Tom Santwyk-Anderson" <tsantwyk-anderson@otek.com.au>

27/03/2008 02:48 PM

To <Julie.Hood@ghd.com.au>
cc '"Charlie Barber"' <cbarber@otek.com.au>, <Fouad.Abo@ghd.com.au>, <Lee.Gedge@ghd.com.au>, '"Timm Kurth"' <timm.kurth@melbournewater.com.au>, '"Christian Beasley"' <cbeasley@otek.com.au>
Subject RE: Riverwalk - Sub-Areas 4A & 4I Sample and Analysis Plans

Julie,

Please find attached the amended Sample and Analysis Plans for Sub-Areas 4A & 4I for the Riverwalk Project at Werribee. Christian Beasley has also drafted a letter (attached) highlighting sections that have been amended in each SAP.

Please do not hesitate to contact me if you have any queries regarding these SAPs.

Regards,

Tom Santwyk-Anderson

Tom Santwyk-Anderson| Project Manager

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A Level 1, 222 St Kilda Road, St Kilda VIC 3182 **W** www.otek.com.au

---

From: Julie.Hood@ghd.com.au [mailto:Julie.Hood@ghd.com.au]
Sent: Friday, 22 February 2008 10:47 AM
To: Tom Santwyk-Anderson
Cc: 'Charlie Barber'; Fouad.Abo@ghd.com.au; Lee.Gedge@ghd.com.au; 'Timm Kurth'
Subject: Re: Riverwalk - Sub-Areas 4A & 4I Sample and Analysis Plans

Hi Tom,

Please find attached our review of the sampling and analysis plans for Area 4A and 4I.

Should you have any questions, please do not hesitate to contact me on 03 8687 8891.

Kind regards

Julie Hood
Environmental Scientist

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T 61 3 8687 8000 | D 61 3 8687 8891 | F 61 3 8687 8111 | julie.hood@ghd.com.au
Level 8 180 Lonsdale Street Melbourne 3000 Australia | www.ghd.com.au

"Tom Santwyk-Anderson" <tsantwyk-anderson@otek.com.au>

22/01/2008 04:29 PM

To <Julie.Hood@ghd.com.au>

cc <Fouad.Abo@ghd.com.au>, <Lee.Gedge@ghd.com.au>, "'Timm Kurth'" <timm.kurth@melbournewater.com.au>, "'Charlie Barber'" <cbarber@otek.com.au>

Subject Riverwalk - Sub-Areas 4A & 4I Sample and Analysis Plans

Repository: 311157500 "Werribee Fields Audit Areas 3 and 4"

Julie,

Please find attached the SAPs for Sub-Areas 4A and 4I. I have also attached the original Area 4 Scope of Works with the revised analytical program that was submitted and approved in 2005/2006.

Could you please review the attached documents and confirm whether you consider the SAPs appropriate.

Please do not hesitate to contact me if you have any queries regarding the SAPs.

Regards,

Tom Santwyk-Anderson

BEng (Geol, Hons)

Project Manager

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Appendix F

PID Calibration Table

Appendix F - Equipment Calibration

Sub Area 4A
PID Calibration
Melbourne Water, Werribee, Victoria

Date	PID Calibrated	PID Requires Service	Reading Post Span Calibration	Zero Calibration Reading
8/04/2008	Yes	No	98	0
9/04/2008	Yes	No	100	0.1
10/04/2008*	Yes	No	101	0
11/04/2008*	Yes	No	99	0
14/04/2008*	Yes	No	102	0.1
15/04/2008*	Yes	No	100	0
17/04/2008	Yes	No	100	0
9/02/2009	Yes	No	101	0
16/02/2009	Yes	No	99	0
13/02/2009*	Yes	No	100	0
27/07/2009	Yes	No	100	0
29/07/2009	Yes	No	98	0.1
26/10/2009	Yes	No	99	0

* Due to human error, PID screening was not conducted at grid test pits 4A/G2, G4, G15 to G17, G21 to G24, G30, G36 and G38 or at targeted test pit 4A/T3B. It is considered unlikely that any volatile contamination would have been missed due to the following multiple lines of evidence:

- the grid test pits were not targeting any suspected sources of hydrocarbons or other volatiles;
- the targeted test pit was targeting septic system infrastructure which is not a suspected source of hydrocarbons or any other volatiles; and
- there was no visual or olfactory evidence of hydrocarbons or any other volatiles at any of the test pits listed.

The oversight therefore does not impact the conclusions of the report.

Note:

1) Calibration gas used was 100ppm (±2ppm) Isobutylene

ENVIROEQUIP RENTALS

Your Friend in the Field

Equipment Report - MINIRAE 2000 PID

This PID has been performance checked / calibrated* as follows:

Calibration	Actual Value	Reading	Pass?		
Zero – fresh air	0.0 ppm	0.0 ppm	☑		
Span – Isobutylene	105 ppm	105 ppm	☑		
Operations Check					
☑ Performance Check (pump, lamp, sensor & battery voltage check)					
☑ Battery Charged	☑ Filters Check	☑ Spare battery Voltage (5.5v minimum) 6.04 V			

* Calibration gas traceability information is available upon request.

Date: 08-04-2008 Checked by: MC

Signed:

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
✓	☐	☐	MiniRae 2000 PID / Operational Check, plus Battery Voltage @ 5.6 V
✓	☐	☐	Lamp Voltage @ 10.6 V Compound Set to: Isobut C/factor: 1.0
✓	☐	☐	Protective yellow rubber boot
✓	☐	☐	Inlet probe (attached to PID)
✓	☐	☐	Spare water trap filter(s) Qty 6
✓	☐	☐	Charger 240V to 12V 500mA
✓	☐	☐	Instruction Manual behind foam on the lid of case "
✓	☐	☐	Quick Guide Sheet behind foam on the lid of case "
✓	☐	☐	Spare Alkaline Battery Compartment with batteries
✓	☐	☐	Inline Moisture trap Filter Guide Laminated
✗	✗	✗	Calibration regulator & tubing (optional)
✓	☐	☐	Carry Case
☐	☐	☐	

Processors Signature/ Initials

EE Quote Reference	7131	Condition on return
Customer Ref		
Equipment ID	PID 20	
Equipment serial no.		
Return Date	/ /	
Return Time		

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Email: rentals.melb@enviroequip.com Internet: www.rentals.enviroequip.com

Appendix G

Groundwater Data

Monitoring Well: MW-07	**Project Name:** Area 4 Monitoring Well Installations	
Client: Melbourne Water	**Location:** Werribee Area 4	
	Project N°: 3106004/1001	

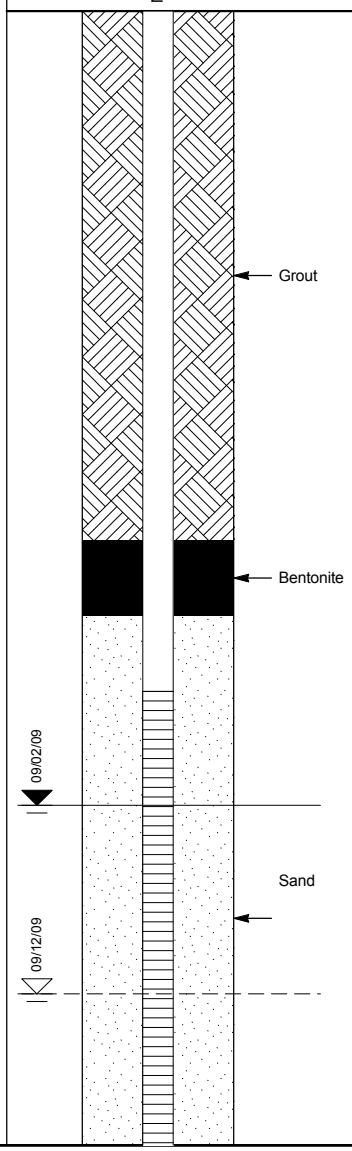
Logged By: CBE	**Bore Size:** 100mm	**Drilling Co:** Aqua Drilling
Checked By: KJB	**Total Depth:** 16.00m	**Machine:** Geoprobe 66200DT
Date Started: 09/02/2009	**Casing Size:**	**Drilling Method:** Push Probe
Date Completed: 09/02/2009	**Casing Depth:** 16.00m	**Permit No:** WLE043972

Ground Level: **Coordinates:** (AMG)

Sample Intervals	PID (ppm)	Sample ID N°	Sample ID Depth (m)	DESCRIPTION OF STRATA	USCS Classification Letter	USCS Classification Symbol	Depth (m BGS)
				Silt with fine sand (MC), light brown (5YR 5/6), low plasticity fines, very stiff, dry.	ML		0
				Silt with sand (ML), moderate yellowish brown (10YR 5/4), low plasticity fines, minor carbonate nodules, very stiff, dry.	ML		
	0.2	MW-7/1.0	1.00	Clay (CH), dark reddish brown (5YR 3/4), plastic fines, hard, dry.			
	1.2	MW-7/2.0	2.00				2
	1.0	MW-7/3.0	3.00				
	1.2	MW-7/4.0	4.00				4
	1.9	MW-7/5.0	5.00		ML		
	2.6	MW-7/6.0	6.00				6
	0.8	MW-7/7.0	7.00				
	1.6	MW-7/8.0	8.00				8
				Clay (CH), dark grey 7.5 YR 4/1, high plasticity fines, very stiff, dry, some weathered Basalt fragments.	ML		
	1.2	MW-7/9.0	9.00	Basalt, light brownish grey (5YR 6/1).			
	2.3	MW-7/10.0	10.00				10
	2.0	MW-7/11.0	11.00				
	0.8	MW-7/12.0	12.00		CH		12
	2.0	MW-7/13.0	13.00				
	0.4	MW-7/14.0	14.00				14

GROUNDWATER OBSERVATIONS
ID Static Water Level Reference Point
MW-07

WELL CONSTRUCTION DETAILS



ELEVATION

Remarks: - approximate groundwater depth encountered during drilling.

- stabilized groundwater level.

Push probe to 9 meters, hammer drill to 16 meters with sampling every meter. Water encountered at 13 meters bgl.

Sketch:

OTEK_03_LIBRARY.GLB Log OTEK_REPORT_04 3106004 - 4B AND 4A WELL INSTALL BORELOGS.GPJ <<DrawingFile>> 01/11/2012 11:45

Monitoring Well: MW-07	**Project Name:** Area 4 Monitoring Well Installations	
Client: Melbourne Water	**Location:** Werribee Area 4	
	Project N°: 3106004/1001	

Logged By: CBE	**Bore Size:** 100mm	**Drilling Co:** Aqua Drilling
Checked By: KJB	**Total Depth:** 16.00m	**Machine:** Geoprobe 66200DT
Date Started: 09/02/2009	**Casing Size:**	**Drilling Method:** Push Probe
Date Completed: 09/02/2009	**Casing Depth:** 16.00m	**Permit No:** WLE043972

Ground Level: **Coordinates:** (AMG)

Sample Intervals	PID (ppm)	Sample ID N°	Sample ID Depth (m)	DESCRIPTION OF STRATA	USCS Classification Letter	USCS Classification Symbol	Depth (m BGS)	GROUNDWATER OBSERVATIONS / WELL CONSTRUCTION DETAILS	ELEVATION
	1.7	MW-7/15.0	15.00	Basalt, light brownish grey (5YR 6/1). *(continued)*	CH			Sand	
	0.6	MW-7/16.0	16.00	Bottom of Monitoring Well at 16.00 meters.			16		
							18		
							20		
							22		
							24		
							26		
							28		

GROUNDWATER OBSERVATIONS
ID Static Water Level Reference Point
MW-07

Remarks: - approximate groundwater depth encountered during drilling.
- stabilized groundwater level.

Push probe to 9 meters, hammer drill to 16 meters with sampling every meter. Water encountered at 13 meters bgl.

Sketch:

Monitoring Well: MW-08	**Project Name:** Area 4 Monitoring Well Installations	
Client: Melbourne Water	**Location:** Werribee Area 4	
	Project N°: 3106004/1001	

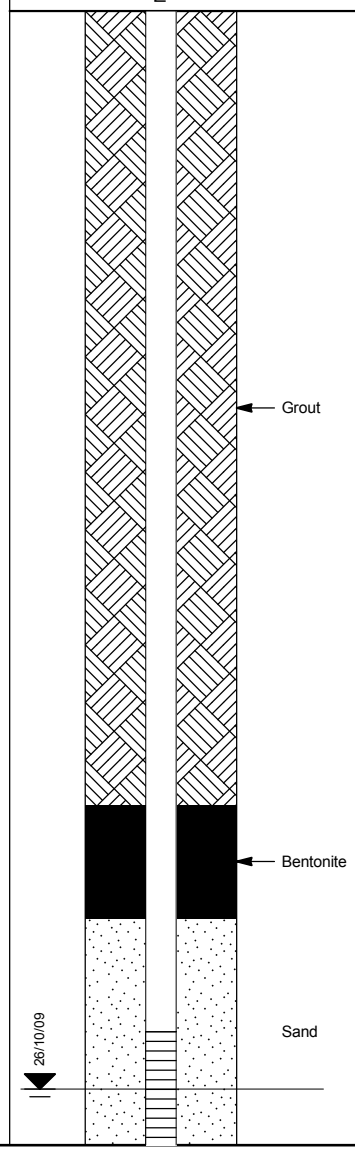
Logged By: KJB	**Bore Size:** 229mm	**Drilling Co:** Boart Longyear
Checked By: RHE	**Total Depth:** 15.00m	**Machine:**
Date Started: 26/10/2009	**Casing Size:**	**Drilling Method:** Hollow Stem Auger
Date Completed: 26/10/2009	**Casing Depth:** 15.00m	**Permit No:** WLE043972

Ground Level: **Coordinates:** (AMG)

Sample Intervals	PID (ppm)	Sample ID N°	Sample ID Depth (m)	DESCRIPTION OF STRATA	USCS Classification Letter	USCS Classification Symbol	Depth (m BGS)
				Gravel with minor sand (GP), light brownish grey (5YR 6/1), non plastic fines, very dense, dry. Gravel road base.	GP		0
	0.1	MW-8/1.0	1.00	Silt with sand (ML), yellowish red (5YR 4/6), low plasticity fines, very stiff, slightly moist.	ML		1
	0.2	MW-8/2.0	2.00	Silt with sand (ML), dark yellowish brown (10YR 4/6), low plasticity fines, hard, dry, many small rootlets.	ML		2
				Silt with sand (ML), very dark greyish brown (10YR 3/2), low plasticity fines, hard, dry, many small rootlets.	ML		
	0.1	MW-8/3.0	3.00	Clay (CH), dark reddish brown (5YR 3/4), plastic fines, hard, dry.	CH		3
				Clay (CH), strong brown (7.5YR 4/6), plastic fines, hard, dry.	CH		
	0.0	MW-8/4.0	4.00	Silt with sand (ML), dark reddish brown (5YR 3/4), low plasticity fines, hard, dry.	ML		4
				Silt with sand (ML), strong brown (7.5YR 5/6), low plasticity fines, very stiff, slightly moist.	ML		
	0.1	MW-8/5.0	5.00				5
	0.1	MW-8/6.0	6.00	Clay (CH), dark reddish brown (5YR 3/4), plastic fines, hard, dry, prominant Iron Oxide bands	CH		6
	0.0	MW-8/7.0	7.00	Clay (CH), dark grey 7.5 YR 4/1, high plasticity fines, very stiff, slightly moist, some Iron Oxide nodules and weathered Basalt fragments.	CH		7
	0.0	MW-8/8.0	8.00				8
				Basalt, light brownish grey (5YR 6/1).			9

GROUNDWATER OBSERVATIONS
ID Static Water Level Reference Point
MW-08

WELL CONSTRUCTION DETAILS



ELEVATION

Remarks: - approximate groundwater depth encountered during drilling.
- stabilized groundwater level.

Hollow stem auger with split spoon sampling every meter to 8.5 meters. Hammer drilling from 8.5 meters to 15 meters no sampling. Water encountered at 9.5 meters BGS.

Sketch:

OTEK_03_LIBRARY.GLB Log OTEK_REPORT_04 4B AND 4A WELL INSTALL BORELOGS.GPJ <<DrawingFile>> 03/02/2010 16:36

Monitoring Well: MW-08	**Project Name:** Area 4 Monitoring Well Installations	
Client: Melbourne Water	**Location:** Werribee Area 4	
	Project N°: 3106004/1001	

Logged By: KJB	**Bore Size:** 229mm	**Drilling Co:** Boart Longyear
Checked By: RHE	**Total Depth:** 15.00m	**Machine:**
Date Started: 26/10/2009	**Casing Size:**	**Drilling Method:** Hollow Stem Auger
Date Completed: 26/10/2009	**Casing Depth:** 15.00m	**Permit No:** WLE043972

Ground Level: **Coordinates:** (AMG)

Sample Intervals	PID (ppm)	Sample ID N°	Sample ID Depth (m)	DESCRIPTION OF STRATA	USCS Classification Letter	USCS Classification Symbol	Depth (m BGS)	GROUNDWATER OBSERVATIONS / WELL CONSTRUCTION DETAILS	ELEVATION
				Basalt, light brownish grey (5YR 6/1). *(continued)*			10	26/10/09	
							11		
							12	Sand	
							13		
							14		
				Bottom of Monitoring Well at 15.00 meters.			15		
							16		
							17		
							18		
							19		

GROUNDWATER OBSERVATIONS: ID MW-08 — Static Water Level — Reference Point

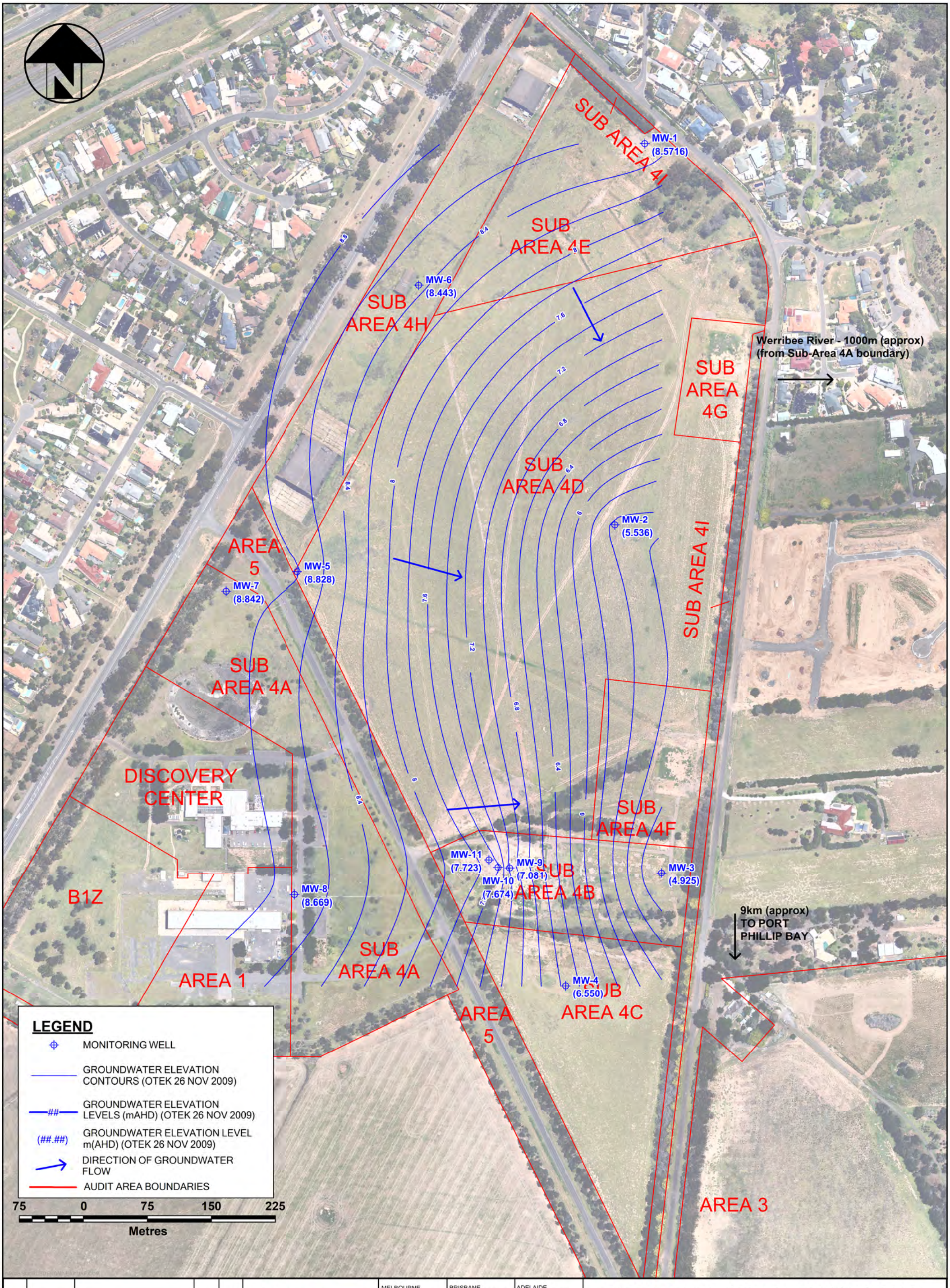
Remarks: - approximate groundwater depth encountered during drilling.

- stabilized groundwater level.

Hollow stem auger with split spoon sampling every meter to 8.5 meters. Hammer drilling from 8.5 meters to 15 meters no sampling. Water encountered at 9.5 meters BGS.

Sketch:

OTEK_03_LIBRARY.GLB Log OTEK_REPORT_04 4B AND 4A WELL INSTALL BORELOGS.GPJ <<DrawingFile>> 03/02/2010 16:36



ISSUE	DATE	AMENDMENTS	DRN	CKD
01	28.04.11	ORIGINAL ISSUE	LTD	MW

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RIVERWALK AREA 4 GROUNDWATER CONTOUR MAP
(OTEK - 26 NOV 2009)
WERRIBEE RIVERWALK, MELBOURNE WATER, WERRIBEE, VICTORIA

REV: 01	DATE: 30.10.12	CHECKED	APPROVED	FIG No:
DRAWN: ENV	DWG NAME:	LTD		**FIGURE 7**

Appendix H

Monitoring Well Purging Record Data Sheet and Equipment Calibration Sheets

Monitoring Well Developing Sheet

Well location: MW-8	**Project Name:** Werribee Area 4 - Hydrogeological Assessment	**Date:** 17-Nov-09
Project Number: 3106004/1001	**Pump on (Time):** 8:30	**Sample Device:** -
Person Sampling: KJB	**Pump off (Time):** -	**Flow Cell:** -
Pre-Purging groundwater depth (m): -		**Pump depth (m):** 9.37
Post-Purging groundwater depth (m): -		**Well Depth (m):** 14.58

SAMPLED WATER OBSERVATIONS

Colour	Odour	Turbidity	Sheen	LNAPL
-	-	-	-	-

Field Measurements and Stabilisation criteria

Time	$Depth_{gw}$	CPM	Purge Rate	Volume Purged	DO	EC	pH	Redox	Temp
minutes	m		mL/min	L	ppm	mS		mV	°C
08:30	9.37	-	-	50.0	4.45	8.32	7.70	183.0	21.3
-	9.37	-	-	50.0	5.81	5.56	7.51	200.0	21.1
-	9.37	-	-	50.0	6.34	5.53	7.49	195.0	20.0
Sampled									
EPAV Stabilisation Criteria					+/-10%	+/-3%	+/- 0.05	+/- 10	N/A

Notes:

LNAPL = Light Non Aqueous Phase Liquid **"-" = No Data provided**

LOW-FLOW PURGING
FIELD RECORD SHEET

Well Location:	MW-7	**Project Name:**	Werribee Area 4	**Date:**	26/11/2009
Project Number:	3106004	**Pump on (Time):**	13:04	**Sample device:**	-
Person sampling:	KJB/LDL	**Pump off (Time):**	13:38	**Flow cell:**	-
Pre-purging groundwater depth (m):	10.986			**Sampling location depth (m):**	12.5
Post-sampling groundwater depth (m):	10.988			**Well depth (m):**	16.85

Physical Observations

Colour	Odour	Turbidity	Sheen	PSH
Dark grey tinge	None	Medium	-	-

Field measurements and Stabilisation criteria

Time	$Depth_{GW}$ m	CPM	Purge rate mL/min	Volume purged L	DO ppm	EC mS	pH	Redox mV	Temp ^{o}C
13:10	10.995	MN/30:10	-	0.4	5.44	5.82	7.21	177	21.8
13:13	10.986	MN/30:10	-	0.6	4.91	5.90	7.21	174	21.0
13:16	10.991	MN/30:10	-	0.8	4.52	5.96	7.20	173	20.4
13:19	10.990	MN/30:10	-	1	4.12	6.00	7.19	172	20.0
13:22	10.988	MN/30:10	-	1.2	3.73	6.04	7.17	171	19.6
13:25	10.990	MN/30:10	-	1.4	3.68	6.05	7.17	170	19.4
13:28	10.990	MN/30:10	-	1.6	3.49	6.07	7.17	169	19.3
EPAV Stabilisation Criteria					+/- 10%	+/- 3%	+/- 0.05	+/- 10	N/A
ANALYSIS:									

Comments: Slightly murky discharge, Longer time to stabilize than previous wells. Pump came up with rootlets covering.

LOW-FLOW PURGING
FIELD RECORD SHEET

Well Location:	MW-8	**Project Name:**	Werribee Area 4	**Date:**	25/11/2009
Project Number:	3106004	**Pump on (Time):**	12:44	**Sample device:**	-
Person sampling:	KJB/LDL	**Pump off (Time):**	13:30	**Flow cell:**	-
Pre-purging groundwater depth (m):	9.509			**Sampling location depth (m):**	10.55
Post-sampling groundwater depth (m):	9.510			**Well depth (m):**	14.75

Physical Observations

Colour	Odour	Turbidity	Sheen	PSH
Clear	None	-	-	-

Field measurements and Stabilisation criteria

Time	$Depth_{GW}$ m	CPM	Purge rate mL/min	Volume purged L	DO ppm	EC mS	pH	Redox mV	Temp ^{o}C
12:52	9.535	2/25:5	-	0.5	0.22	2.77	7.52	147	22.4
12:55	9.535	2/25:5	-	1	0.19	3.97	7.45	153	21.0
12:58	9.537	2/25:5	-	1.5	0.17	5.18	7.43	158	20.6
13:02	9.542	2/25:5	-	2	0.15	6.14	7.43	159	20.4
13:05	9.545	2/25:5	-	2.5	0.13	4.15	7.44	159	20.5
EPAV Stabilisation Criteria					+/- 10%	+/- 3%	+/- 0.05	+/- 10	N/A

ANALYSIS:

Comments:

LOW-FLOW PURGING
FIELD RECORD SHEET

Well Location:	MW-7	**Project Name:**	Werribee Area 4	**Date:**	07.12.11
Project Number:	3106004	**Pump on (Time):**	14:25	**Sample device:**	MICROPURGE
Person sampling:	LTD/CC	**Pump off (Time):**	15:05	**Flow cell:**	Y
Pre-purging groundwater depth (m):	9.998			**Sampling location depth (m):**	10.8
Post-sampling groundwater depth (m):	10.009			**Well depth (m):**	11.289

Physical Observations

Colour	Odour	Turbidity	Sheen	PSH
CLEAR	N/A	N/A	N/A	N/A

Field measurements and Stabilisation criteria

Time	$Depth_{GW}$ m	CPM	Purge rate mL/min	Volume purged L	DO ppm	EC mS	pH	Redox mV	Temp ^{o}C
2:29:00	10.028	1	-	-	4.46	7.61	7.61	86	21.4
2:36:00	10.010	1	-	-	4.51	7.90	7.54	89	20.9
2:40:00	10.021	1	-	2.2	4.32	7.87	7.42	63	21.3
2:43:00	10.019	2	-		4.91	7.64	7.46	85	21.8
2:48:00	10.017	4	-	-	5.04	7.68	7.41	84	21.6
2:52:00	10.021	4	-	4.5L	5.01	7.71	7.43	86	22.0
EPAV Stabilisation Criteria					+/- 10%	+/- 3%	+/- 0.05	+/- 10	N/A

ANALYSIS:

Comments:

LOW-FLOW PURGING
FIELD RECORD SHEET

Well Location:	MW-8	**Project Name:**	Werribee Area 4	**Date:**	07.12.11
Project Number:	3106004	**Pump on (Time):**	15:25	**Sample device:**	MICROPURGE
Person sampling:	LTD/CC	**Pump off (Time):**	16:08	**Flow cell:**	Y
Pre-purging groundwater depth (m):	8.551			**Sampling location depth (m):**	12.0
Post-sampling groundwater depth (m):	8.556			**Well depth (m):**	14.485

Physical Observations

Colour	Odour	Turbidity	Sheen	PSH
CLEAR	N/A	MED	N/A	N/A

Field measurements and Stabilisation criteria

Time	$Depth_{GW}$ m	CPM	Purge rate mL/min	Volume purged L	DO ppm	EC mS	pH	Redox mV	Temp ^{o}C
3:31:00	8.565	1	-	-	3.40	7.25	7.11	139	23.2
3:36:00	8.555	1	-	-	3.73	8.05	7.25	140	22.4
3:41:00	8.556	1	-	-	3.94	8.14	7.26	140	23.1
3:44:00	8.555	1	-	-	3.92	7.69	7.28	139	23.4
3:46:00	8.558	2	-	-	4.01	7.99	7.28	138	23.5
3:50:00	8.557	2	-	-	4.02	8.06	7.29	139	23.1
3:53:00	8.559	2	-	5.5	4.01	8.01	7.27	140	23.1
EPAV Stabilisation Criteria					+/- 10%	+/- 3%	+/- 0.05	+/- 10	N/A

ANALYSIS:

Comments:

ENVIROEQUIP RENTALS

Your Friend in the Field

Equipment Report - TPS 90FLMV Water Quality Meter

This Water Quality Meter has been performance checked / calibrated* as follows:

pH	☑ pH 6.88	☐ pH 7.00	☑ pH 4.00	☐ pH 10.00	☑ pH
Conductivity	☑ 0.0mS/cm	☐ 2.76mS/cm	☐ 12.88mS/cm	☑ 58.6mS/cm	☑ mS/cm
TDS	☑ 0.0 ppk	☑ 36 ppk	☑ ppk		
Dissolved Oxygen	☑ 0.00ppm in Sodium Sulphite			☐ 100% Saturation in Air	
Redox (ORP)**	☑ Electrode operability test 240mV +/- 10%. Actual 229 mV				
☑ Electrodes cleaned/checked		☑ Charged 8.1 v (min 7.2V)		☑ Temperature	
Turbidity	0.0 NTU☐	90NTU☐	360NTU☐	N/A NTU☐	

* Calibration solution traceability information is available upon request.
** This meter uses an Ag/AgCl ORP electrode. To convert readings to SHE (Standard Hydrogen Electrode), add 199mV to the mV reading. For further information, refer to www.enviroequip.com/quipnotes/ORP.htm.

Date: 24/11/2009 Checked by: Martin

Signed: MB

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
☑	☐	☐	90FLMV Unit. Ops check / Battery Voltage @ 8.1
☑	☐	☐	pH sensor 5m
☑	☐	☐	Conductivity / TDS / Temperature k=10 sensor 5m
☑	☐	☐	Dissolved Oxygen YSI5739 sensor 5m
☑	☐	☐	Redox (ORP) sensor 5m
☑	☐	☐	Battery charger: 240V AC to 12V DC 200mA
☑	☐	☐	Instruction Manual
☑	☐	☐	Quick Guide
☑	☐	☐	Syringe with storage solution for pH & ORP sensors
☒	☐	☐	Turbidity 5m
☑	☐	☐	Carry Case

Processors Signature/ Initials MB

EE Quote Reference	17565	Condition on return
Customer Ref	0777	
Equipment ID	90FLMV WA4	
Equipment serial no.		
Return Date	/ /	
Return Time		

Melbourne Sydney Brisbane Perth Auckland Kuala Lumpur

5 Caribbean Dve Scoresby VIC 3179 Australia

Telephone: 03-97574377 FreeCall (interstate): 1-800-675-756

Rentals Direct Fax: 03-97637141 Head Office Fax: 03-97632083

Email: rentals@enviroequip.com Internet: www.rentals.enviroequip.com

ENVIROEQUIP RENTALS

Your Friend in the Field

EQUIPMENT CERTIFICATION REPORT

Sample Pro Micro Purge Low-Flow Bladder Sampling Pump

This Pump has been checked as follows:

Cleaned / checked	Description
☑	Clean and check all components

Date: 24/11/2009

Checked by: Martin

Signature: MB

Please check that the following items are received and all items are returned. Please clean equipment before returning. **A minimum $20 service/repair charge applies to any unclean or damaged items.**

Sent	Received	Returned	Description
☑	☐	☐	QED Sample MicroPurge Pump Serial No: 11359
☑	☐	☐	Pump Operating Field Guide laminated
☑	☐	☐	Pump Controller ID: OMP10WA Batt Volts 3.8
☒	☐	☐	Pump Controller Blue Airline Hose
☒	☐	☐	Blue Airline Hose Quick Connect Fitting for ¼" Airline
☑	☐	☐	Pump Tube & Cap
☑	☐	☐	Hanger Cable S/steel, length 60 m
☑	☐	☐	Hanger Cable Clamp – Black with Orange Tip
☑	☐	☐	Controller Instructions inside case
☑	☐	☐	Compressor ID: TA 4101E
☐	☐	☐	Comp connecting Hose & Push lock fittings
☐	☐	☐	Gas Bottle CO2 ID: _____
☐	☐	☐	CO2D Gas Regulator ID: _____ in Carry Case
☐	☐	☐	CO2D Cylinder Gas Regulator Shift Spanner
☐	☐	☐	Gas Bottle Trolley
☐	☐	☐	Cylinder weight… Without Trolley _____ KG
☑	☐	☐	Flow Cell ID: EFC 500Q With Lid: Yes/~~No~~
☑	☐	☐	Spare Disposable Bladders, qty 2
☑	☐	☐	Spare balls, Qty 2
☑	☐	☐	Spare o-rings, Qty 2
		MB	Processors Signature/ Initials

QUOTE NO.: _____

ID: QSP6P

CLIENT'S REF:P/O No: _____

CLIENT'S REF:Job No: _____

RETURN DATE: ____/____/____

TIME: _____

CONDITION ON RETURN : _____

5 Caribbean Dve Scoresby VIC 3179 Australia

Telephone: 03-97574377 FreeCall (interstate): 1-800-675-756

Rentals Direct Fax: 03-97637141 Head Office Fax: 03-97632083

Email: rentals@enviroequip.com Internet: www.rentals.enviroequip.com

Equipment Calibration Form
TPS 90-FLMV

enqip

Prepared by: Paul Santamaria		**Authorised by:** Mario Lopez	
Created: 09/11/2010	**ID** EH-001	**Version:** 4.0	**Page:** 1 of 1

Date of Calibration: 6/12/2011

ENQIP Reference: OTEK/Catherine Crilly/3106004

Equipment calibrated / Checked by Technician: ML

UNIT IDENTIFICATION

Model Number	90-FLMV
Serial Number	V1926
Unit Type	TPS Water Quality Meter 90-FLMV

Calibration	**Results**
Battery Voltage charged	Fully Charged
pH: Buffer Solution 6.88	6.88
pH: Buffer Solution 4.01	4.01
Redox	NA
Dissolved Oxygen: 0ppm Standard	0ppm
Electrical Conductivity 2760µs/cm	2760µs/cm
TDS	NA
Electrodes cleaned and checked	Yes
Temperature check	yes

QC Signature _____ Date 6/12/2011

enqip
193 Rouse Street (PO Box 410) Port Melbourne 3207
P (03) 9646 8811 | F (03) 9676 9133
E info@enqip.com.au | W www.enqip.com.au

Equipment Checklist
TPS 90-FLMV
Water Quality Meter

Prepared by: Paul Santamaria		**Authorised by:** Mario Lopez	
Created: 10/11/2010	**ID:** EH-011	**Version:** 4.0	**Page:** 1 of 1

Client Name: OTEK/Catherine Crilly/3106004

Date: 6/12/2011

Equipment checked by: ML

The following equipment has been enclosed:

	Equipment	Sent	Returned
✓	**1xTPS 90 FLMV Water Quality Meter**	V1926	
✓	**1x 90 FLMV Battery Charger**	yes	
✓	**1x 90 FLMV Redox sensor probe**	yes	
✓	**1x 90 FLMV pH electrode probe**	yes	
✓	**1x 90 FLMV Dissolved Oxygen probe**	Yes	
✓	**1x 90 FLMV Temperature/conductivity sensor**	Yes	
✓	**1x 90 FLMV manual**	Yes	
✓	**1x 90 FLMV carry case**	yes	
	Equipment Condition	good	
✓	+ FLOW CELL		

Return of Equipment: Items are to be returned by 12.00 noon on the due date shown on Hire Agreement

ENQIP
193 Rouse Street (PO Box 410) Port Melbourne 3207
P (03) 9646 8811 | F (03) 9676 9133
E info@enqip.com.au | W www.enqip.com.au

Appendix I

Data Validation Reports (DVRs), Laboratory Reports and COCs

(See attached file)

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Project Number: 3106004

Address: New Farm Road Werribee

Validation Conducted by: KJB

Signed & Dated: 18/05/2010

Primary Laboratory: ALS

Batch Number: EM0802745

Secondary Laboratory: Amdel

Batch Number: 08ENME0009483
08ENME0009756

Sample Matrix: (Shade)

Soil

Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
52	3	3	11

Have the Following Criteria Been Met? (Shade)

Blind Replicate	**OK if >5%**	11.538
Split Sample	**OK if >5%**	11.538
Blank Samples	**OK**	11

7 Rinsate
0 Field
4 Trip

Explain any Discrepancies:

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
3	**Number obtained**	**3**	
QS3, QS4, QS5	**Sample Identification**	**QS3A, QS4A, QS5A**	
115	**Total Number of Analytes**	99	**B**
0	**No. of analytes with RPD >50% (Fail)**	4	
115	**Number of analytes <50% (Pass)**	95	
100.0	**% Pass**	96.0	
A			

Explain any Discrepancies:

4A/QS-3A - 3 RPD exceedences for Chromium, Cobalt and Nickel with RPD's of 60%, 96% and 64% respectively.

4A/QS-5A - 1 RPD exceedence for Chromium with a RPD of 68%.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	4		7
Sample Identifictaion	TB-1, 2, 3, 4		RB-1, 2, 3, 4, 5, 6, 7,
Number of Analytes	39		78
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Validation Conducted by: KJB

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	91	3
	No. Fails	9	0
Analysis	**No. Passes**	105	3
	No. Fails	3	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	**F**	**G**
	Primary	**Secondary**
TOTAL # Analytes of DUP Samples	906	
# samples RPD >50% **(FAIL)**	0	
% Pass	100	

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

No data provided from Amdel

Method Blank Analysis (MB)	**H**	**I**
	Primary	**Secondary**
TOTAL # Analytes	491	102
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	**J**	**K**
	Primary	**Secondary**
TOTAL # Analytes	405	60
# analytes outside range i.e <70% or >130% **(FAIL)**	19	0
% Pass	95	100

Surrogates

OK (>95%)	98
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	**L**	**M**
	Primary	**Secondary**
TOTAL # Analytes	64	
# Analytes outside range i.e <70% or >130%	14	
% Pass	78	

Internal Spikes

OK (>95%)	78
NOT OK (<95%)	

Explanation for Failures:

No data provided from Amdel

Analytes from Total Metals, OCP, Phenolic Componds, PAH and TPH analysis fell outside the acceptable laboratory range for Matrix Spike Recovery of 70-130%.

FINAL DATA

	Sample Type	**Total Data Quality Objective Fails**	**Total Number of Results**	**% Data Quality Objective Passes**
A	**Primary Duplicates**	0	115	100.0
B	**Secondary Duplicates**	4	99	96.0
C	**Trip Blanks**	0	39	100.0
D	**Field Blanks**	0	0	-
E	**Rinsate Blanks**	0	78	100.0
F & G	**Lab Internal Duplicates**	0	906	100.0
H & I	**Lab Method Blanks**	0	593	100.0
J & K	**Lab Internal Spike Recoveries**	19	465	95.9
L & M	**Laboratory Spike Recoveries**	14	64	78.1
	Total	**37**	**2359**	**98.4**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

OTEK Australia
INSPECTION VERIFICATION RECORD
PASS ✓ FAIL
NAME (PRINT) CATHERINE CHILLY
SIGNATURE
DATE 3 MARCH 2011

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0802745**	Page	: 1 of 74
Amendment	: **3**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 21189		
C-O-C number	: ----	Date Samples Received	: 17-APR-2008
Sampler	: EB	Issue Date	: 02-JUN-2008
Site	: ----		
		No. of samples received	: 261
Quote number	: ----	No. of samples analysed	: 102

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Herman Lin	Senior Inorganic Chemist	Inorganics
Kumara Dadallage	Senior Organic Chemist	Organics
Nancy Wang	Instrument Chemist	Organics
Peter Donaghy	Laboratory Supervisor	Newcastle
Terrance Hettipathirana	Senior ICP/MS Chemist	Inorganics
Xingbin Lin	Instrument Chemist	Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **Amendment: LOR for EP075SIM amended to standard value.**
- **EG005T : EM0802745 #154 duplicate failed for Manganese due to sample heterogeneity.**
- **EG005T : EM0802745 #155 matrix spike failed for Barium and Molydenum due to sample heterogeneity.**
- **EG005T : EM0802745 #179 matrix spike failed for Zinc due to sample heterogeneity.**

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C1	4A/C2	4A/C3	4A/C4	4A/C5
				Client sampling date / time: [08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[09-APR-2008]	[09-APR-2008]
				EM0802745-154	EM0802745-155	EM0802745-156	EM0802745-157	EM0802745-158
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**8.1**	**7.3**	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**7.5**	**7.8**	**6.5**	**7.3**	**7.0**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	**6**	**7**	**7**	**6**	**6**
Barium	7440-39-3	10	mg/kg	**80**	**130**	**120**	**270**	**120**
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**39**	**43**	**35**	**36**	**37**
Cobalt	7440-48-4	2	mg/kg	**16**	**14**	**14**	**14**	**13**
Copper	7440-50-8	5	mg/kg	**18**	**23**	**19**	**16**	**19**
Lead	7439-92-1	5	mg/kg	**14**	**12**	**10**	**14**	**10**
Manganese	7439-96-5	5	mg/kg	**332**	**247**	**258**	**464**	**248**
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	**29**	**36**	**35**	**26**	**33**
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	**42**	**47**	**40**	**42**	**41**
Zinc	7440-66-6	5	mg/kg	**42**	**42**	**42**	**36**	**39**
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C1	4A/C2	4A/C3	4A/C4	4A/C5
				Client sampling date / time: [08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[09-APR-2008]	[09-APR-2008]
				EM0802745-154	EM0802745-155	EM0802745-156	EM0802745-157	EM0802745-158
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C1 [08-APR-2008] EM0802745-154	4A/C2 [08-APR-2008] EM0802745-155	4A/C3 [08-APR-2008] EM0802745-156	4A/C4 [09-APR-2008] EM0802745-157	4A/C5 [09-APR-2008] EM0802745-158
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**96.9**	**91.3**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**105**	**100**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**88.0**	**88.2**	**74.9**	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**88.1**	**88.9**	**74.2**	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**71.1**	**70.3**	**48.8**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**91.0**	**92.9**	**79.1**	----	----
Anthracene-d10	1719-06-8	0.1	%	**91.5**	**93.4**	**83.1**	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**99.5**	**103**	**73.0**	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/C7	4A/C8	4A/C9	4A/C10	4A/C11
				Client sampling date / time	[09-APR-2008]	[09-APR-2008]	[09-APR-2008]	[10-APR-2008]	[10-APR-2008]
					EM0802745-160	EM0802745-161	EM0802745-162	EM0802745-163	EM0802745-164
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		----	----	**9.2**	----	----
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**9.7**	**6.3**	**5.2**	**27.5**	**30.0**
EG005T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	**14**	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg		**6**	**6**	**7**	<5	<5
Barium	7440-39-3	10	mg/kg		**70**	**140**	**70**	**330**	**320**
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	**1**	**1**
Boron	7440-42-8	50	mg/kg		<50	<50	<50	**60**	**70**
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		**37**	**34**	**31**	**38**	**42**
Cobalt	7440-48-4	2	mg/kg		**13**	**14**	**13**	**14**	**13**
Copper	7440-50-8	5	mg/kg		**16**	**20**	**18**	**14**	**15**
Lead	7439-92-1	5	mg/kg		**15**	**10**	**9**	**10**	**10**
Manganese	7439-96-5	5	mg/kg		**361**	**271**	**271**	**239**	**264**
Molybdenum	7439-98-7	2	mg/kg		<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		**24**	**37**	**34**	**22**	**22**
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		**42**	**40**	**37**	**53**	**60**
Zinc	7440-66-6	5	mg/kg		**39**	**42**	**42**	**17**	**18**
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg		----	----	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg		----	----	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		----	----	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg		----	----	<0.05	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C7 [09-APR-2008] EM0802745-160	4A/C8 [09-APR-2008] EM0802745-161	4A/C9 [09-APR-2008] EM0802745-162	4A/C10 [10-APR-2008] EM0802745-163	4A/C11 [10-APR-2008] EM0802745-164
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	----	----	<0.2	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C7 [09-APR-2008] EM0802745-160	4A/C8 [09-APR-2008] EM0802745-161	4A/C9 [09-APR-2008] EM0802745-162	4A/C10 [10-APR-2008] EM0802745-163	4A/C11 [10-APR-2008] EM0802745-164
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	----	<0.5
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	----	**60.9**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	----	**62.4**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**77.0**	----	**74.2**	----	**78.2**
2-Chlorophenol-D4	93951-73-6	0.1	%	**86.0**	----	**84.5**	----	**88.0**
2.4.6-Tribromophenol	118-79-6	0.1	%	**43.4**	----	**39.8**	----	**46.8**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**86.1**	----	**84.3**	----	**87.5**
Anthracene-d10	1719-06-8	0.1	%	**93.6**	----	**89.2**	----	**90.4**
4-Terphenyl-d14	1718-51-0	0.1	%	**86.0**	----	**83.4**	----	**86.9**

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C13	4A/C14	4A/C15	4A/C16	4A/C17
				Client sampling date / time: [10-APR-2008]	[10-APR-2008]	[10-APR-2008]	[11-APR-2008]	[11-APR-2008]
				EM0802745-166	EM0802745-167	EM0802745-168	EM0802745-169	EM0802745-170
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	**9.3**	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**8.5**	**7.4**	**5.0**	**6.0**	**7.7**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	<5	**7**	**6**	**5**	**5**
Barium	7440-39-3	10	mg/kg	**100**	**160**	**70**	**70**	**70**
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**28**	**36**	**28**	**51**	**39**
Cobalt	7440-48-4	2	mg/kg	**9**	**16**	**12**	**10**	**10**
Copper	7440-50-8	5	mg/kg	**17**	**25**	**16**	**23**	**17**
Lead	7439-92-1	5	mg/kg	**15**	**13**	**9**	**23**	**14**
Manganese	7439-96-5	5	mg/kg	**235**	**306**	**248**	**300**	**236**
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	**22**	**39**	**31**	**24**	**24**
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	**30**	**43**	**35**	**36**	**44**
Zinc	7440-66-6	5	mg/kg	**35**	**46**	**40**	**58**	**39**
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	**0.2**	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C13	4A/C14	4A/C15	4A/C16	4A/C17
				Client sampling date / time: [10-APR-2008]	[10-APR-2008]	[10-APR-2008]	[11-APR-2008]	[11-APR-2008]
				EM0802745-166	EM0802745-167	EM0802745-168	EM0802745-169	EM0802745-170
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	----	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C13	4A/C14	4A/C15	4A/C16	4A/C17
				Client sampling date / time: [10-APR-2008]	[10-APR-2008]	[10-APR-2008]	[11-APR-2008]	[11-APR-2008]
				EM0802745-166	EM0802745-167	EM0802745-168	EM0802745-169	EM0802745-170
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	**55.8**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	**56.3**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**73.4**	----	**82.0**	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**84.9**	----	**80.0**	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**39.8**	----	**78.0**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**80.4**	----	**90.0**	----	----
Anthracene-d10	1719-06-8	0.1	%	**88.6**	----	**90.0**	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**87.7**	----	**88.8**	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C18	4A/C19	4A/C20	4A/C21	4A/C22
				Client sampling date / time: [11-APR-2008]	[14-APR-2008]	[14-APR-2008]	[14-APR-2008]	[14-APR-2008]
				EM0802745-171	EM0802745-172	EM0802745-173	EM0802745-174	EM0802745-175
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	----	**7.5**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**7.1**	**8.5**	**6.5**	**6.0**	**5.2**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	----	**6**	**6**	**6**	**5**
Barium	7440-39-3	10	mg/kg	----	**90**	**90**	**150**	**60**
Beryllium	7440-41-7	1	mg/kg	----	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	----	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	**35**	**34**	**34**	**40**
Cobalt	7440-48-4	2	mg/kg	----	**13**	**13**	**14**	**10**
Copper	7440-50-8	5	mg/kg	----	**21**	**16**	**17**	**17**
Lead	7439-92-1	5	mg/kg	----	**19**	**14**	**11**	**18**
Manganese	7439-96-5	5	mg/kg	----	**378**	**342**	**340**	**276**
Molybdenum	7439-98-7	2	mg/kg	----	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	----	**26**	**24**	**31**	**22**
Selenium	7782-49-2	5	mg/kg	----	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg	----	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	----	**39**	**38**	**41**	**38**
Zinc	7440-66-6	5	mg/kg	----	**46**	**41**	**38**	**45**
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	----	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	----	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg	----	----	----	----	<0.05

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C18 [11-APR-2008] EM0802745-171	4A/C19 [14-APR-2008] EM0802745-172	4A/C20 [14-APR-2008] EM0802745-173	4A/C21 [14-APR-2008] EM0802745-174	4A/C22 [14-APR-2008] EM0802745-175
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	----	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	----	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	----	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg	----	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C18 [11-APR-2008] EM0802745-171	4A/C19 [14-APR-2008] EM0802745-172	4A/C20 [14-APR-2008] EM0802745-173	4A/C21 [14-APR-2008] EM0802745-174	4A/C22 [14-APR-2008] EM0802745-175
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	----	----	----	**104**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	----	----	----	**107**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**85.2**	**73.9**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**87.6**	**76.3**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**93.2**	**47.3**	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**91.6**	**78.5**	----	----	----
Anthracene-d10	1719-06-8	0.1	%	**91.6**	**80.8**	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**96.8**	**82.4**	----	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/C23	4A/C24	4A/C25	4A/C26	4A/C27
				Client sampling date / time	[14-APR-2008]	[14-APR-2008]	[14-APR-2008]	[14-APR-2008]	[14-APR-2008]
					EM0802745-176	EM0802745-177	EM0802745-178	EM0802745-179	EM0802745-180
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		----	----	----	----	**8.3**
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**4.3**	**8.0**	**8.8**	**7.5**	**8.2**
EG005T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	----	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg		<5	----	**6**	**14**	**6**
Barium	7440-39-3	10	mg/kg		**40**	----	**80**	**70**	**70**
Beryllium	7440-41-7	1	mg/kg		<1	----	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	----	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		**29**	----	**35**	**38**	**40**
Cobalt	7440-48-4	2	mg/kg		**9**	----	**12**	**12**	**14**
Copper	7440-50-8	5	mg/kg		**11**	----	**18**	**24**	**18**
Lead	7439-92-1	5	mg/kg		**10**	----	**15**	**16**	**12**
Manganese	7439-96-5	5	mg/kg		**250**	----	**365**	**398**	**267**
Molybdenum	7439-98-7	2	mg/kg		<2	----	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		**18**	----	**28**	**24**	**30**
Selenium	7782-49-2	5	mg/kg		<5	----	<5	<5	<5
Tin	7440-31-5	5	mg/kg		<5	----	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		**34**	----	**39**	**38**	**45**
Zinc	7440-66-6	5	mg/kg		**30**	----	**43**	**52**	**37**
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	<0.05

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C23 [14-APR-2008] EM0802745-176	4A/C24 [14-APR-2008] EM0802745-177	4A/C25 [14-APR-2008] EM0802745-178	4A/C26 [14-APR-2008] EM0802745-179	4A/C27 [14-APR-2008] EM0802745-180
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	----	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	----	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	----	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg	----	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C23 [14-APR-2008] EM0802745-176	4A/C24 [14-APR-2008] EM0802745-177	4A/C25 [14-APR-2008] EM0802745-178	4A/C26 [14-APR-2008] EM0802745-179	4A/C27 [14-APR-2008] EM0802745-180
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	----	----	----	**70.4**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	----	----	----	**72.8**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**63.4**	**68.2**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**65.9**	**71.2**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**40.6**	**55.1**	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**68.8**	**72.0**	----	----	----
Anthracene-d10	1719-06-8	0.1	%	**71.0**	**73.9**	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**70.5**	**74.0**	----	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/C28	4A/C29	4A/C30	4A/C31	4A/C32
				Client sampling date / time	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]
					EM0802745-181	EM0802745-182	EM0802745-183	EM0802745-184	EM0802745-185
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		**7.9**	----	----	**7.8**	----
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**6.7**	**7.6**	**8.9**	**8.9**	**8.7**
EG005T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg		<5	**5**	**6**	**6**	**6**
Barium	7440-39-3	10	mg/kg		**70**	**90**	**60**	**60**	**110**
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	**1**	<1
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		**30**	**35**	**36**	**43**	**35**
Cobalt	7440-48-4	2	mg/kg		**10**	**12**	**13**	**12**	**13**
Copper	7440-50-8	5	mg/kg		**14**	**15**	**20**	**22**	**16**
Lead	7439-92-1	5	mg/kg		**12**	**12**	**11**	**14**	**11**
Manganese	7439-96-5	5	mg/kg		**289**	**278**	**235**	**210**	**310**
Molybdenum	7439-98-7	2	mg/kg		<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		**24**	**24**	**33**	**32**	**32**
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		**35**	**41**	**40**	**48**	**41**
Zinc	7440-66-6	5	mg/kg		**34**	**35**	**42**	**39**	**37**
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	<0.05	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C28	4A/C29	4A/C30	4A/C31	4A/C32
				Client sampling date / time: [08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]
				EM0802745-181	EM0802745-182	EM0802745-183	EM0802745-184	EM0802745-185
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	<0.05	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C28	4A/C29	4A/C30	4A/C31	4A/C32
				Client sampling date / time: [08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]
				EM0802745-181	EM0802745-182	EM0802745-183	EM0802745-184	EM0802745-185
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**112**	----	**105**	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**126**	----	**114**	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**81.6**	**82.2**	**78.4**	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**78.8**	**82.1**	**77.6**	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**50.6**	**49.4**	**44.0**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**83.1**	**87.7**	**82.7**	----	----
Anthracene-d10	1719-06-8	0.1	%	**96.1**	**86.9**	**82.4**	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**81.2**	**84.9**	**78.7**	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/C34	4A/C35	4A/C36	4A/C37	4A/C38
				Client sampling date / time	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[07-APR-2008]	[07-APR-2008]
					EM0802745-187	EM0802745-188	EM0802745-189	EM0802745-190	EM0802745-191
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		----	----	----	----	**7.8**
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**5.8**	**6.0**	**5.6**	**6.4**	**8.8**
EG005T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg		**6**	<5	**5**	<5	**5**
Barium	7440-39-3	10	mg/kg		**70**	**80**	**80**	**80**	**180**
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	**1**
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		**34**	**35**	**32**	**30**	**35**
Cobalt	7440-48-4	2	mg/kg		**11**	**11**	**11**	**12**	**18**
Copper	7440-50-8	5	mg/kg		**15**	**16**	**15**	**15**	**26**
Lead	7439-92-1	5	mg/kg		**12**	**13**	**9**	**8**	**9**
Manganese	7439-96-5	5	mg/kg		**259**	**264**	**193**	**254**	**284**
Molybdenum	7439-98-7	2	mg/kg		<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		**26**	**25**	**28**	**39**	**55**
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		**39**	**37**	**38**	**38**	**45**
Zinc	7440-66-6	5	mg/kg		**36**	**37**	**36**	**34**	**40**
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	<0.05

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C34	4A/C35	4A/C36	4A/C37	4A/C38
				Client sampling date / time: [08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[07-APR-2008]	[07-APR-2008]
				EM0802745-187	EM0802745-188	EM0802745-189	EM0802745-190	EM0802745-191
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	----	----	----	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg	----	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	----	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg	----	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg	----	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	----	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C34 [08-APR-2008] EM0802745-187	4A/C35 [08-APR-2008] EM0802745-188	4A/C36 [08-APR-2008] EM0802745-189	4A/C37 [07-APR-2008] EM0802745-190	4A/C38 [07-APR-2008] EM0802745-191
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	----	----	----	**88.2**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	----	----	----	**96.3**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**88.8**	**75.6**	**90.9**	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**88.4**	**77.9**	**93.5**	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**58.0**	**68.8**	**71.0**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**93.0**	**79.6**	**94.1**	----	----
Anthracene-d10	1719-06-8	0.1	%	**93.5**	**79.2**	**94.6**	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**92.1**	**82.0**	**95.1**	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/C40	4A/C41	4A/C42	4A/C43	4A/C44
				Client sampling date / time	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]
					EM0802745-193	EM0802745-194	EM0802745-195	EM0802745-196	EM0802745-197
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		----	----	8.9	7.8	----
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		5.5	8.6	6.0	5.6	5.7
EG005T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg		<5	5	6	<5	6
Barium	7440-39-3	10	mg/kg		40	100	150	40	150
Beryllium	7440-41-7	1	mg/kg		<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		30	34	34	31	42
Cobalt	7440-48-4	2	mg/kg		7	11	14	9	12
Copper	7440-50-8	5	mg/kg		11	15	19	12	19
Lead	7439-92-1	5	mg/kg		11	11	10	10	11
Manganese	7439-96-5	5	mg/kg		194	205	264	181	209
Molybdenum	7439-98-7	2	mg/kg		<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		19	25	34	23	33
Selenium	7782-49-2	5	mg/kg		<5	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		35	39	39	35	46
Zinc	7440-66-6	5	mg/kg		30	34	43	31	37
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg		----	----	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg		----	----	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		----	----	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	<0.05	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	<0.05	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg		----	----	<0.05	<0.05	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C40	4A/C41	4A/C42	4A/C43	4A/C44
				Client sampling date / time: [08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]
				EM0802745-193	EM0802745-194	EM0802745-195	EM0802745-196	EM0802745-197
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	----	----	<0.2	<0.2	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C40	4A/C41	4A/C42	4A/C43	4A/C44
				Client sampling date / time: [08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]	[08-APR-2008]
				EM0802745-193	EM0802745-194	EM0802745-195	EM0802745-196	EM0802745-197
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	----	**95.2**	**109**	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	----	**102**	**116**	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**82.2**	**61.6**	**92.6**	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**84.8**	**60.7**	**92.5**	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**83.5**	**51.5**	**72.4**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**86.9**	**61.0**	**94.9**	----	----
Anthracene-d10	1719-06-8	0.1	%	**86.6**	**67.3**	**95.7**	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**88.0**	**60.3**	**105**	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C46	4A/C47	4A/C48	----	----
				Client sampling date / time: [15-APR-2008]	[15-APR-2008]	[15-APR-2008]	----	----
				EM0802745-199	EM0802745-200	EM0802745-201	----	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	**8.5**	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**3.1**	**8.9**	**7.2**	----	----
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	----	----
Arsenic	7440-38-2	5	mg/kg	<5	**7**	**6**	----	----
Barium	7440-39-3	10	mg/kg	**40**	**70**	**170**	----	----
Beryllium	7440-41-7	1	mg/kg	<1	**1**	<1	----	----
Boron	7440-42-8	50	mg/kg	<50	<50	<50	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	**27**	**49**	**32**	----	----
Cobalt	7440-48-4	2	mg/kg	**7**	**21**	**14**	----	----
Copper	7440-50-8	5	mg/kg	**8**	**23**	**17**	----	----
Lead	7439-92-1	5	mg/kg	**9**	**12**	**10**	----	----
Manganese	7439-96-5	5	mg/kg	**183**	**223**	**275**	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	----	----
Nickel	7440-02-0	2	mg/kg	**16**	**34**	**33**	----	----
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	----	----
Tin	7440-31-5	5	mg/kg	<5	<5	<5	----	----
Vanadium	7440-62-2	5	mg/kg	**33**	**52**	**36**	----	----
Zinc	7440-66-6	5	mg/kg	**27**	**36**	**36**	----	----
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C46	4A/C47	4A/C48	----	----
				Client sampling date / time: [15-APR-2008]	[15-APR-2008]	[15-APR-2008]	----	----
				EM0802745-199	EM0802745-200	EM0802745-201	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	----	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	<0.05	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/C46	4A/C47	4A/C48	----	----
				Client sampling date / time: [15-APR-2008]	[15-APR-2008]	[15-APR-2008]	----	----
				EM0802745-199	EM0802745-200	EM0802745-201	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	**77.9**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	**78.9**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**67.6**	**67.8**	**67.7**	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**70.0**	**70.3**	**70.1**	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**57.9**	**44.5**	**43.2**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**73.3**	**72.7**	**72.6**	----	----
Anthracene-d10	1719-06-8	0.1	%	**73.2**	**76.6**	**76.0**	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**73.9**	**75.7**	**74.9**	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G1/0.25	4A/G1/0.5	4A/G1/1.0	4A/G4/0.25	4A/G4/0.5
				Client sampling date / time: 10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-001	EM0802745-002	EM0802745-003	EM0802745-010	EM0802745-011
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**8.4**	**8.5**	----	**6.6**	**5.6**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**7.3**	**9.4**	**7.2**	**4.4**	**9.0**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	**5**	**7**	**6**	<5	**7**
Barium	7440-39-3	10	mg/kg	**100**	**90**	**70**	**70**	**70**
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	**1**
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**25**	**28**	**25**	**25**	**43**
Cobalt	7440-48-4	2	mg/kg	**9**	**12**	**9**	**11**	**10**
Copper	7440-50-8	5	mg/kg	**16**	**21**	**14**	**9**	**20**
Lead	7439-92-1	5	mg/kg	**10**	**14**	**15**	**10**	**12**
Manganese	7439-96-5	5	mg/kg	**180**	**326**	**258**	**380**	**161**
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	**20**	**28**	**20**	**17**	**29**
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	**32**	**36**	**33**	**31**	**46**
Zinc	7440-66-6	5	mg/kg	**27**	**46**	**50**	**25**	**33**
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G1/0.25	4A/G1/0.5	4A/G1/1.0	4A/G4/0.25	4A/G4/0.5
				Client sampling date / time: 10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-001	EM0802745-002	EM0802745-003	EM0802745-010	EM0802745-011
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**108**	**97.6**	**106**	**92.6**	**83.8**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**109**	**98.9**	**109**	**94.1**	**86.1**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**77.1**	**79.7**	**83.7**	**75.6**	**82.4**
2-Chlorophenol-D4	93951-73-6	0.1	%	**78.1**	**82.8**	**83.9**	**78.9**	**83.1**
2.4.6-Tribromophenol	118-79-6	0.1	%	**84.5**	**81.3**	**86.1**	**79.9**	**79.4**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G1/0.25	4A/G1/0.5	4A/G1/1.0	4A/G4/0.25	4A/G4/0.5
				Client sampling date / time: 10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-001	EM0802745-002	EM0802745-003	EM0802745-010	EM0802745-011
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**81.5**	**88.3**	**86.5**	**85.9**	**83.4**
Anthracene-d10	1719-06-8	0.1	%	**90.3**	**78.8**	**79.2**	**90.2**	**91.1**
4-Terphenyl-d14	1718-51-0	0.1	%	**87.4**	**93.7**	**91.6**	**90.7**	**90.3**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**93.4**	**85.6**	**84.6**	**81.2**	**83.1**
Toluene-D8	2037-26-5	0.1	%	**88.8**	**86.6**	**89.1**	**88.2**	**89.7**
4-Bromofluorobenzene	460-00-4	0.1	%	**84.0**	**81.4**	**82.0**	**80.6**	**81.8**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/G4/1.0	4A/G7/0.25	4A/G9/0.25	4A/G9/0.5	4A/G9/1.0
				Client sampling date / time	10-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00
					EM0802745-012	EM0802745-019	EM0802745-025	EM0802745-026	EM0802745-027
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		**6.6**	----	**7.9**	**9.7**	----
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**5.0**	**9.6**	**8.7**	**5.6**	**5.7**
EG005T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		----	----	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg		----	**7**	**7**	**6**	**6**
Barium	7440-39-3	10	mg/kg		----	----	**310**	**200**	**80**
Beryllium	7440-41-7	1	mg/kg		----	----	**1**	<1	<1
Boron	7440-42-8	50	mg/kg		----	----	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		----	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		----	----	**41**	**28**	**26**
Cobalt	7440-48-4	2	mg/kg		----	----	**13**	**12**	**11**
Copper	7440-50-8	5	mg/kg		----	**22**	**26**	**19**	**17**
Lead	7439-92-1	5	mg/kg		----	**13**	**14**	**10**	**9**
Manganese	7439-96-5	5	mg/kg		----	----	**256**	**237**	**241**
Molybdenum	7439-98-7	2	mg/kg		----	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		----	**30**	**36**	**31**	**30**
Selenium	7782-49-2	5	mg/kg		----	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg		----	<2	----	----	----
Tin	7440-31-5	5	mg/kg		----	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		----	----	**45**	**34**	**32**
Zinc	7440-66-6	5	mg/kg		----	**36**	**39**	**37**	**37**
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		----	<0.5	----	----	----
EK026G: Total Cyanide By Discrete Analyser									
Total Cyanide	57-12-5	1	mg/kg		----	<1	----	----	----
EK040T: Fluoride Total									
Fluoride	16984-48-8	40	mg/kg		----	**270**	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.10	mg/kg		----	<0.10	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G4/1.0	4A/G7/0.25	4A/G9/0.25	4A/G9/0.5	4A/G9/1.0
				Client sampling date / time: 10-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00
				EM0802745-012	EM0802745-019	EM0802745-025	EM0802745-026	EM0802745-027
EP068A: Organochlorine Pesticides (OC) - Continued								
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	----	----
Styrene	100-42-5	0.5	mg/kg	----	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	<0.2	----	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	<0.02	----	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	<0.01	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg	----	<0.4	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	<0.02	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	<0.01	----	----	----
Chloroform	67-66-3	0.02	mg/kg	----	<0.02	----	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	<0.01	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	<0.01	----	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	<0.02	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg	----	<0.02	----	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	<0.04	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G4/1.0	4A/G7/0.25	4A/G9/0.25	4A/G9/0.5	4A/G9/1.0
				Client sampling date / time: 10-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00
				EM0802745-012	EM0802745-019	EM0802745-025	EM0802745-026	EM0802745-027
EP074I: Volatile Halogenated Compounds - Continued								
Tetrachloroethene	127-18-4	0.02	mg/kg	----	<0.02	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	<0.01	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	<0.02	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	<0.02	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	----	<0.02	----	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	<0.02	----	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	<0.02	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	<0.01	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	<0.01	----	----	----
^ Sum of other chlorinated hydrocarbons (VIC EPA 448.3)	----	0.01	mg/kg	----	<0.01	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	----	<0.03	----	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	----	<0.03	----	----	----
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	----	<0.03	----	----	----
4-Chloro-3-Methylphenol	59-50-7	0.03	mg/kg	----	<0.03	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	----	<0.05	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	<0.05	----	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	----	<0.03	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G4/1.0	4A/G7/0.25	4A/G9/0.25	4A/G9/0.5	4A/G9/1.0
				Client sampling date / time: 10-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00
				EM0802745-012	EM0802745-019	EM0802745-025	EM0802745-026	EM0802745-027
EP075A: Phenolic Compounds (Halogenated) - Continued								
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	----	<0.05	----	----	----
Pentachlorophenol	87-86-5	0.2	mg/kg	----	<0.2	----	----	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	----	<0.03	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	----	<1	----	----	----
2-Methylphenol	95-48-7	1	mg/kg	----	<1	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	<1	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg	----	<1	----	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	<1	----	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	<5	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg	----	<5	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	<5	----	----	----
Dinoseb	88-85-7	5	mg/kg	----	<5	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	----	<5	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	<1	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	----	----	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	----	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	<0.03	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	<0.03	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G4/1.0	4A/G7/0.25	4A/G9/0.25	4A/G9/0.5	4A/G9/1.0
				Client sampling date / time: 10-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00
				EM0802745-012	EM0802745-019	EM0802745-025	EM0802745-026	EM0802745-027
EP075I: Organochlorine Pesticides - Continued								
beta-BHC	319-85-7	0.03	mg/kg	----	<0.03	----	----	----
gamma-BHC	58-89-9	0.03	mg/kg	----	<0.03	----	----	----
delta-BHC	319-86-8	0.03	mg/kg	----	<0.03	----	----	----
Heptachlor	76-44-8	0.03	mg/kg	----	<0.03	----	----	----
Aldrin	309-00-2	0.03	mg/kg	----	<0.03	----	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	<0.03	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	----	<0.03	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	----	<0.03	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	----	<0.03	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	----	----
Dieldrin	60-57-1	0.03	mg/kg	----	<0.03	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	<0.03	----	----	----
Endrin	72-20-8	0.03	mg/kg	----	<0.03	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	----	<0.03	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	<0.03	----	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	----	<0.05	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg	----	<0.03	----	----	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg	----	<0.03	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	<0.03	----	----	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg	----	<0.05	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg	----	<0.03	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	<0.03	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	----	----
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	**89.0**	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**85.1**	----	**95.1**	**93.9**	**92.5**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**87.7**	----	**97.7**	**96.0**	**94.4**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G4/1.0	4A/G7/0.25	4A/G9/0.25	4A/G9/0.5	4A/G9/1.0
				Client sampling date / time: 10-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00
				EM0802745-012	EM0802745-019	EM0802745-025	EM0802745-026	EM0802745-027
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	**79.5**	----	----	----
Toluene-D8	2037-26-5	0.1	%	----	**80.5**	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	**81.0**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**82.9**	----	**81.0**	**82.8**	**88.0**
2-Chlorophenol-D4	93951-73-6	0.1	%	**79.3**	----	**87.4**	**83.5**	**82.1**
2.4.6-Tribromophenol	118-79-6	0.1	%	**75.1**	----	**79.3**	**73.9**	**71.7**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**85.5**	----	**95.5**	**84.6**	**87.5**
Anthracene-d10	1719-06-8	0.1	%	**82.9**	----	**96.7**	**80.0**	**84.5**
4-Terphenyl-d14	1718-51-0	0.1	%	**92.9**	----	**102**	**90.7**	**93.2**
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	0.1	%	----	**74.8**	----	----	----
Phenol-d6	13127-88-3	0.1	%	----	**75.6**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	----	**74.3**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	**80.0**	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	0.1	%	----	**60.6**	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.1	%	----	**75.5**	----	----	----
2-Fluorobiphenyl	321-60-8	0.1	%	----	**75.1**	----	----	----
Anthracene-d10	1719-06-8	0.1	%	----	**81.9**	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	**91.7**	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**87.1**	----	**78.9**	**80.8**	**81.5**
Toluene-D8	2037-26-5	0.1	%	**98.9**	----	**91.2**	**95.3**	**96.4**
4-Bromofluorobenzene	460-00-4	0.1	%	**87.7**	----	**78.4**	**81.2**	**83.8**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G11/0.25	4A/G11/0.5	4A/G11/1.0	4A/G14/0.1	4A/G16/0.25
Client sampling date / time				09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-031	EM0802745-032	EM0802745-033	EM0802745-040	EM0802745-048
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**8.8**	**9.3**	----	----	**8.8**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**7.9**	**5.3**	**6.5**	**24.1**	**7.8**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	----	<5
Arsenic	7440-38-2	5	mg/kg	**6**	**6**	**6**	<5	**6**
Barium	7440-39-3	10	mg/kg	**140**	**100**	**60**	----	**160**
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	----	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	----	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**33**	**29**	**26**	----	**30**
Cobalt	7440-48-4	2	mg/kg	**13**	**12**	**11**	----	**13**
Copper	7440-50-8	5	mg/kg	**23**	**17**	**16**	**13**	**20**
Lead	7439-92-1	5	mg/kg	**13**	**8**	**8**	**8**	**11**
Manganese	7439-96-5	5	mg/kg	**316**	**243**	**248**	----	**300**
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	**32**	**32**	**29**	**16**	**33**
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Silver	7440-22-4	2	mg/kg	----	----	----	<2	----
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	**36**	**33**	**31**	----	**37**
Zinc	7440-66-6	5	mg/kg	**43**	**35**	**36**	**14**	**38**
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	<0.5	----
EK026G: Total Cyanide By Discrete Analyser								
Total Cyanide	57-12-5	1	mg/kg	----	----	----	<1	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	----	----	----	**270**	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	----	----	----	<0.10	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G11/0.25	4A/G11/0.5	4A/G11/1.0	4A/G14/0.1	4A/G16/0.25
				Client sampling date / time: 09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-031	EM0802745-032	EM0802745-033	EM0802745-040	EM0802745-048
EP068A: Organochlorine Pesticides (OC) - Continued								
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	<0.05
EP074A: Monocyclic Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G11/0.25	4A/G11/0.5	4A/G11/1.0	4A/G14/0.1	4A/G16/0.25
Client sampling date / time				09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-031	EM0802745-032	EM0802745-033	EM0802745-040	EM0802745-048
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
Benzene	71-43-2	0.2	mg/kg	----	----	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg	----	----	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	----	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	----	----	<0.5	----
Styrene	100-42-5	0.5	mg/kg	----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg	----	----	----	<0.5	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	----	----	----	<0.2	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	----	----	----	<0.02	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	----	----	----	<0.01	----
Methylene chloride	75-09-2	0.4	mg/kg	----	----	----	<0.4	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	----	----	----	<0.02	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	----	----	----	<0.01	----
Chloroform	67-66-3	0.02	mg/kg	----	----	----	<0.02	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	----	----	----	<0.01	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	----	----	----	<0.01	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	----	----	----	<0.02	----
Trichloroethene	79-01-6	0.02	mg/kg	----	----	----	<0.02	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	----	----	----	<0.04	----
Tetrachloroethene	127-18-4	0.02	mg/kg	----	----	----	<0.02	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	----	----	----	<0.01	----
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	----	----	----	<0.02	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	----	----	----	<0.02	----
Chlorobenzene	108-90-7	0.02	mg/kg	----	----	----	<0.02	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	----	----	----	<0.02	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	----	----	----	<0.02	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	----	----	----	<0.01	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	----	----	----	<0.01	----
^ Sum of other chlorinated hydrocarbons (VIC EPA 448.3)	----	0.01	mg/kg	----	----	----	<0.01	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G11/0.25	4A/G11/0.5	4A/G11/1.0	4A/G14/0.1	4A/G16/0.25
Client sampling date / time				09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-031	EM0802745-032	EM0802745-033	EM0802745-040	EM0802745-048
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	----	----	----	<0.03	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	----	----	----	<0.03	----
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	----	----	----	<0.03	----
4-Chloro-3-Methylphenol	59-50-7	0.03	mg/kg	----	----	----	<0.03	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	----	----	----	<0.05	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	----	----	----	<0.05	----
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	----	----	----	<0.03	----
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	----	----	----	<0.05	----
Pentachlorophenol	87-86-5	0.2	mg/kg	----	----	----	<0.2	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	----	----	----	<0.03	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	----	----	----	<1	----
2-Methylphenol	95-48-7	1	mg/kg	----	----	----	<1	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	----	<1	----
2-Nitrophenol	88-75-5	1	mg/kg	----	----	----	<1	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	----	----	----	<1	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	----	----	----	<5	----
4-Nitrophenol	100-02-7	5	mg/kg	----	----	----	<5	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	----	----	----	<5	----
Dinoseb	88-85-7	5	mg/kg	----	----	----	<5	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	----	----	----	<5	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	----	----	----	<1	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G11/0.25 Client sampling date / time: 09-APR-2008 15:00 EM0802745-031	4A/G11/0.5 09-APR-2008 15:00 EM0802745-032	4A/G11/1.0 09-APR-2008 15:00 EM0802745-033	4A/G14/0.1 10-APR-2008 15:00 EM0802745-040	4A/G16/0.25 10-APR-2008 15:00 EM0802745-048
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	<0.5	----
Anthracene	120-12-7	0.5	mg/kg	----	----	----	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	<0.5	----
Pyrene	129-00-0	0.5	mg/kg	----	----	----	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	<0.5	----
Chrysene	218-01-9	0.5	mg/kg	----	----	----	<0.5	----
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	----	----	----	<0.5	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	----	----	<0.5	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	----	----	----	<0.03	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	----	----	----	<0.03	----
beta-BHC	319-85-7	0.03	mg/kg	----	----	----	<0.03	----
gamma-BHC	58-89-9	0.03	mg/kg	----	----	----	<0.03	----
delta-BHC	319-86-8	0.03	mg/kg	----	----	----	<0.03	----
Heptachlor	76-44-8	0.03	mg/kg	----	----	----	<0.03	----
Aldrin	309-00-2	0.03	mg/kg	----	----	----	<0.03	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	----	----	----	<0.03	----
cis-Chlordane	5103-71-9	0.03	mg/kg	----	----	----	<0.03	----
trans-Chlordane	5103-74-2	0.03	mg/kg	----	----	----	<0.03	----
Endosulfan 1	959-98-8	0.03	mg/kg	----	----	----	<0.03	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	----	<0.05	----
Dieldrin	60-57-1	0.03	mg/kg	----	----	----	<0.03	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	----	----	----	<0.03	----
Endrin	72-20-8	0.03	mg/kg	----	----	----	<0.03	----
Endosulfan 2	33213-65-9	0.03	mg/kg	----	----	----	<0.03	----
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	----	----	----	<0.03	----
4.4`-DDT	50-29-3	0.05	mg/kg	----	----	----	<0.05	----
Methoxychlor	72-43-5	0.03	mg/kg	----	----	----	<0.03	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg	----	----	----	<0.03	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G11/0.25	4A/G11/0.5	4A/G11/1.0	4A/G14/0.1	4A/G16/0.25
Client sampling date / time				09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-031	EM0802745-032	EM0802745-033	EM0802745-040	EM0802745-048
EP075I: Organochlorine Pesticides - Continued								
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	----	----	----	<0.03	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg	----	----	----	<0.05	----
^ Chlordane	57-74-9	0.03	mg/kg	----	----	----	<0.03	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	----	----	----	<0.03	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	----	----	<10	----
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	----	----	<50	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	----	----	----	**100**	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**110**	**80.2**	**88.3**	----	**99.7**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**110**	**80.9**	**88.8**	----	**100**
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	----	----	**81.1**	----
Toluene-D8	2037-26-5	0.1	%	----	----	----	**79.6**	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	----	----	**81.9**	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**88.5**	**81.6**	**82.1**	----	**84.6**
2-Chlorophenol-D4	93951-73-6	0.1	%	**86.7**	**81.4**	**83.6**	----	**81.9**
2.4.6-Tribromophenol	118-79-6	0.1	%	**82.2**	**72.7**	**71.9**	----	**65.6**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**93.4**	**87.4**	**90.3**	----	**87.4**
Anthracene-d10	1719-06-8	0.1	%	**80.3**	**87.6**	**87.1**	----	**83.0**
4-Terphenyl-d14	1718-51-0	0.1	%	**95.9**	**94.6**	**94.5**	----	**93.6**
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	0.1	%	----	----	----	**85.7**	----
Phenol-d6	13127-88-3	0.1	%	----	----	----	**96.9**	----
2-Chlorophenol-D4	93951-73-6	0.1	%	----	----	----	**85.2**	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	----	----	**81.9**	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	0.1	%	----	----	----	**76.6**	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G11/0.25	4A/G11/0.5	4A/G11/1.0	4A/G14/0.1	4A/G16/0.25
				Client sampling date / time: 09-APR-2008 15:00	09-APR-2008 15:00	09-APR-2008 15:00	10-APR-2008 15:00	10-APR-2008 15:00
				EM0802745-031	EM0802745-032	EM0802745-033	EM0802745-040	EM0802745-048
EP075T: Base/Neutral Extractable Surrogates - Continued								
1.2-Dichlorobenzene-D4	2199-69-1	0.1	%	----	----	----	**74.1**	----
2-Fluorobiphenyl	321-60-8	0.1	%	----	----	----	**80.1**	----
Anthracene-d10	1719-06-8	0.1	%	----	----	----	**83.0**	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	----	----	**90.3**	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**83.2**	**77.5**	**84.6**	----	**77.6**
Toluene-D8	2037-26-5	0.1	%	**96.4**	**93.5**	**94.6**	----	**94.2**
4-Bromofluorobenzene	460-00-4	0.1	%	**83.3**	**79.2**	**81.6**	----	**79.9**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G16/0.5	4A/G16/1.0	4A/G21/0.25	4A/G21/0.5	4A/G21/1.0
				Client sampling date / time: 10-APR-2008 15:00	10-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00
				EM0802745-049	EM0802745-050	EM0802745-063	EM0802745-064	EM0802745-065
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**9.3**	**9.5**	**7.1**	**8.3**	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**7.0**	**9.6**	**12.7**	**6.0**	**6.2**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	**10**	<5	<5
Arsenic	7440-38-2	5	mg/kg	**6**	----	**7**	**5**	**6**
Barium	7440-39-3	10	mg/kg	**100**	----	**60**	**120**	**170**
Beryllium	7440-41-7	1	mg/kg	<1	----	**1**	<1	<1
Boron	7440-42-8	50	mg/kg	<50	----	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**29**	----	**44**	**29**	**31**
Cobalt	7440-48-4	2	mg/kg	**12**	----	**17**	**11**	**13**
Copper	7440-50-8	5	mg/kg	**18**	----	**25**	**18**	**21**
Lead	7439-92-1	5	mg/kg	**9**	----	**15**	**10**	**10**
Manganese	7439-96-5	5	mg/kg	**258**	----	**163**	**198**	**289**
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	**31**	----	**29**	**27**	**32**
Selenium	7782-49-2	5	mg/kg	<5	----	<5	<5	<5
Tin	7440-31-5	5	mg/kg	<5	----	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	**34**	----	**49**	**33**	**37**
Zinc	7440-66-6	5	mg/kg	**38**	----	**38**	**32**	**39**
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G16/0.5	4A/G16/1.0	4A/G21/0.25	4A/G21/0.5	4A/G21/1.0
				Client sampling date / time: 10-APR-2008 15:00	10-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00
				EM0802745-049	EM0802745-050	EM0802745-063	EM0802745-064	EM0802745-065
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G16/0.5	4A/G16/1.0	4A/G21/0.25	4A/G21/0.5	4A/G21/1.0
				Client sampling date / time: 10-APR-2008 15:00	10-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00
				EM0802745-049	EM0802745-050	EM0802745-063	EM0802745-064	EM0802745-065
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**94.4**	**102**	**93.0**	**95.8**	**88.2**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**95.2**	**102**	**93.9**	**95.8**	**88.5**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**85.4**	**81.8**	**83.4**	**75.8**	**78.1**
2-Chlorophenol-D4	93951-73-6	0.1	%	**85.5**	**82.1**	**84.7**	**77.7**	**79.8**
2.4.6-Tribromophenol	118-79-6	0.1	%	**65.0**	**64.1**	**64.2**	**57.4**	**55.2**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**90.6**	**88.6**	**85.8**	**84.5**	**88.3**
Anthracene-d10	1719-06-8	0.1	%	**87.2**	**77.1**	**81.2**	**92.1**	**87.0**
4-Terphenyl-d14	1718-51-0	0.1	%	**96.3**	**93.7**	**91.5**	**85.1**	**87.0**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**81.2**	**86.8**	**80.3**	**81.0**	**81.9**
Toluene-D8	2037-26-5	0.1	%	**90.4**	**94.9**	**92.3**	**93.0**	**96.4**
4-Bromofluorobenzene	460-00-4	0.1	%	**78.9**	**84.6**	**80.5**	**81.7**	**84.9**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/G23/0.25	4A/G23/0.5	4A/G23/1.0	4A/G40/0.25	4A/G40/0.5
				Client sampling date / time	11-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00
					EM0802745-069	EM0802745-070	EM0802745-071	EM0802745-075	EM0802745-076
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		**6.0**	**7.9**	**9.6**	**7.7**	**7.4**
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**3.9**	**6.1**	**5.5**	**6.5**	**8.0**
EG005T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	<5	----	<5	<5
Arsenic	7440-38-2	5	mg/kg		<5	**6**	----	<5	<5
Barium	7440-39-3	10	mg/kg		**50**	**190**	----	**60**	**50**
Beryllium	7440-41-7	1	mg/kg		<1	<1	----	<1	<1
Boron	7440-42-8	50	mg/kg		<50	<50	----	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	<1	<1
Chromium	7440-47-3	2	mg/kg		**27**	**35**	----	**16**	**27**
Cobalt	7440-48-4	2	mg/kg		**8**	**13**	----	**6**	**8**
Copper	7440-50-8	5	mg/kg		**12**	**22**	----	**11**	**11**
Lead	7439-92-1	5	mg/kg		**11**	**11**	----	**6**	**10**
Manganese	7439-96-5	5	mg/kg		**250**	**225**	----	**160**	**217**
Molybdenum	7439-98-7	2	mg/kg		<2	<2	----	<2	<2
Nickel	7440-02-0	2	mg/kg		**16**	**29**	----	**20**	**16**
Selenium	7782-49-2	5	mg/kg		<5	<5	----	<5	<5
Tin	7440-31-5	5	mg/kg		<5	<5	----	<5	<5
Vanadium	7440-62-2	5	mg/kg		**34**	**40**	----	**22**	**33**
Zinc	7440-66-6	5	mg/kg		**29**	**34**	----	**19**	**27**
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G23/0.25	4A/G23/0.5	4A/G23/1.0	4A/G40/0.25	4A/G40/0.5
				Client sampling date / time: 11-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00
				EM0802745-069	EM0802745-070	EM0802745-071	EM0802745-075	EM0802745-076
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G23/0.25	4A/G23/0.5	4A/G23/1.0	4A/G40/0.25	4A/G40/0.5
				Client sampling date / time: 11-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00
				EM0802745-069	EM0802745-070	EM0802745-071	EM0802745-075	EM0802745-076
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**103**	**99.5**	**76.4**	**85.4**	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**104**	**101**	**76.4**	**86.2**	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**70.5**	**74.3**	**75.0**	**78.2**	**74.8**
2-Chlorophenol-D4	93951-73-6	0.1	%	**76.7**	**83.2**	**85.5**	**85.0**	**86.6**
2.4.6-Tribromophenol	118-79-6	0.1	%	**38.4**	**46.0**	**44.2**	**43.0**	**49.4**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**74.4**	**75.7**	**86.0**	**84.3**	**87.6**
Anthracene-d10	1719-06-8	0.1	%	**81.0**	**81.1**	**93.5**	**84.6**	**85.0**
4-Terphenyl-d14	1718-51-0	0.1	%	**79.8**	**84.4**	**84.6**	**83.8**	**96.2**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**95.2**	**98.0**	**92.8**	**99.4**	**91.8**
Toluene-D8	2037-26-5	0.1	%	**95.1**	**95.2**	**91.5**	**97.2**	**88.6**
4-Bromofluorobenzene	460-00-4	0.1	%	**99.7**	**101**	**97.1**	**102**	**94.9**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G40/1.0	4A/G40/0.1	4A/G49/0.25	4A/G49/0.5	4A/G49/1.0
				Client sampling date / time: 08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00
				EM0802745-077	EM0802745-078	EM0802745-103	EM0802745-104	EM0802745-105
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	**6.1**	**6.7**	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**6.9**	**1.7**	**4.0**	**8.5**	**5.8**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	----
Arsenic	7440-38-2	5	mg/kg	**6**	<5	<5	**6**	----
Barium	7440-39-3	10	mg/kg	**60**	**60**	**40**	**50**	----
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	**1**	----
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	----
Chromium	7440-47-3	2	mg/kg	**30**	**23**	**30**	**35**	----
Cobalt	7440-48-4	2	mg/kg	**13**	**12**	**6**	**12**	----
Copper	7440-50-8	5	mg/kg	**18**	**17**	**12**	**21**	----
Lead	7439-92-1	5	mg/kg	**11**	<5	**13**	**12**	----
Manganese	7439-96-5	5	mg/kg	**186**	**259**	**229**	**136**	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	----
Nickel	7440-02-0	2	mg/kg	**23**	**58**	**15**	**24**	----
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	----
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	----
Vanadium	7440-62-2	5	mg/kg	**37**	**16**	**29**	**39**	----
Zinc	7440-66-6	5	mg/kg	**31**	**28**	**31**	**31**	----
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G40/1.0	4A/G40/0.1	4A/G49/0.25	4A/G49/0.5	4A/G49/1.0
				Client sampling date / time: 08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00
				EM0802745-077	EM0802745-078	EM0802745-103	EM0802745-104	EM0802745-105
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	----	----	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G40/1.0	4A/G40/0.1	4A/G49/0.25	4A/G49/0.5	4A/G49/1.0
				Client sampling date / time: 08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00
				EM0802745-077	EM0802745-078	EM0802745-103	EM0802745-104	EM0802745-105
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	----	**103**	**86.1**	**59.7**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	----	**104**	**87.7**	**60.2**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**76.3**	**78.8**	**73.2**	**80.4**	**82.0**
2-Chlorophenol-D4	93951-73-6	0.1	%	**85.8**	**86.0**	**85.8**	**87.5**	**91.5**
2.4.6-Tribromophenol	118-79-6	0.1	%	**44.9**	**36.7**	**38.1**	**47.5**	**45.8**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**84.8**	**86.7**	**81.1**	**86.6**	**83.3**
Anthracene-d10	1719-06-8	0.1	%	**90.5**	**77.2**	**86.7**	**80.4**	**92.3**
4-Terphenyl-d14	1718-51-0	0.1	%	**83.9**	**84.8**	**85.4**	**85.9**	**92.1**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**89.2**	----	**97.4**	**91.6**	**95.0**
Toluene-D8	2037-26-5	0.1	%	**89.4**	----	**96.3**	**88.5**	**91.7**
4-Bromofluorobenzene	460-00-4	0.1	%	**95.7**	----	**102**	**93.8**	**97.8**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G50/0.25	4A/G50/0.5	4A/G50/1.0	4A/G59/0.25	4A/G59/0.5
				Client sampling date / time: 07-APR-2008 15:00	07-APR-2008 15:00	07-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00
				EM0802745-106	EM0802745-107	EM0802745-108	EM0802745-124	EM0802745-125
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**6.5**	**6.4**	**7.5**	**6.2**	**8.1**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**8.9**	**9.3**	**6.9**	**3.6**	**9.6**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	<5	<5	<5	**12**
Arsenic	7440-38-2	5	mg/kg	**6**	**6**	**6**	**5**	**6**
Barium	7440-39-3	10	mg/kg	**70**	**70**	**130**	**20**	**540**
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**37**	**36**	**28**	**34**	**44**
Cobalt	7440-48-4	2	mg/kg	**8**	**13**	**11**	**6**	**16**
Copper	7440-50-8	5	mg/kg	**15**	**22**	**18**	**12**	**24**
Lead	7439-92-1	5	mg/kg	**11**	**11**	**10**	**8**	**13**
Manganese	7439-96-5	5	mg/kg	**151**	**150**	**239**	**90**	**261**
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	**25**	**26**	**25**	**22**	**37**
Selenium	7782-49-2	5	mg/kg	<5	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	**42**	**41**	**34**	**36**	**49**
Zinc	7440-66-6	5	mg/kg	**30**	**30**	**32**	**26**	**40**
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G50/0.25	4A/G50/0.5	4A/G50/1.0	4A/G59/0.25	4A/G59/0.5
				Client sampling date / time: 07-APR-2008 15:00	07-APR-2008 15:00	07-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00
				EM0802745-106	EM0802745-107	EM0802745-108	EM0802745-124	EM0802745-125
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G50/0.25	4A/G50/0.5	4A/G50/1.0	4A/G59/0.25	4A/G59/0.5
				Client sampling date / time: 07-APR-2008 15:00	07-APR-2008 15:00	07-APR-2008 15:00	11-APR-2008 15:00	11-APR-2008 15:00
				EM0802745-106	EM0802745-107	EM0802745-108	EM0802745-124	EM0802745-125
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**94.4**	**89.0**	**88.5**	**88.1**	**70.1**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**95.9**	**93.0**	**96.7**	**89.0**	**71.8**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**90.8**	**88.7**	**83.0**	**74.7**	**78.4**
2-Chlorophenol-D4	93951-73-6	0.1	%	**91.0**	**89.4**	**82.4**	**83.9**	**88.5**
2.4.6-Tribromophenol	118-79-6	0.1	%	**74.6**	**71.5**	**60.1**	**42.1**	**45.3**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**94.6**	**92.8**	**87.9**	**82.0**	**87.1**
Anthracene-d10	1719-06-8	0.1	%	**98.2**	**94.4**	**91.4**	**85.3**	**94.4**
4-Terphenyl-d14	1718-51-0	0.1	%	**106**	**104**	**99.5**	**82.2**	**86.3**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**95.2**	**91.6**	**94.7**	**95.6**	**88.6**
Toluene-D8	2037-26-5	0.1	%	**95.9**	**91.8**	**92.4**	**91.9**	**84.8**
4-Bromofluorobenzene	460-00-4	0.1	%	**101**	**97.8**	**99.0**	**96.3**	**88.4**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/G59/1.0	4A/QS-4	4A/QS-5	4A/G26/0.25	4A/G26/0.5
				Client sampling date / time	11-APR-2008 15:00	09-APR-2008 15:00	10-APR-2008 15:00	15-APR-2008 15:00	15-APR-2008 15:00
					EM0802745-126	EM0802745-140	EM0802745-141	EM0802745-205	EM0802745-206
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		**8.7**	----	----	**7.7**	**8.2**
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**10.6**	**6.9**	**8.1**	**7.0**	**7.6**
EG005T: Total Metals by ICP-AES									
Antimony	7440-36-0	5	mg/kg		<5	----	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg		**6**	----	**6**	**6**	<5
Barium	7440-39-3	10	mg/kg		**80**	----	**130**	**70**	**70**
Beryllium	7440-41-7	1	mg/kg		<1	----	<1	<1	<1
Boron	7440-42-8	50	mg/kg		<50	----	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg		<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		**31**	----	**35**	**35**	**27**
Cobalt	7440-48-4	2	mg/kg		**13**	----	**15**	**13**	**11**
Copper	7440-50-8	5	mg/kg		**22**	----	**23**	**20**	**14**
Lead	7439-92-1	5	mg/kg		**13**	----	**12**	**16**	**16**
Manganese	7439-96-5	5	mg/kg		**274**	----	**333**	**432**	**398**
Molybdenum	7439-98-7	2	mg/kg		<2	----	<2	<2	<2
Nickel	7440-02-0	2	mg/kg		**32**	----	**38**	**26**	**20**
Selenium	7782-49-2	5	mg/kg		<5	----	<5	<5	<5
Tin	7440-31-5	5	mg/kg		<5	----	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg		**38**	----	**42**	**40**	**35**
Zinc	7440-66-6	5	mg/kg		**48**	----	**46**	**45**	**38**
EG035T: Total Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G59/1.0	4A/QS-4	4A/QS-5	4A/G26/0.25	4A/G26/0.5
Client sampling date / time				11-APR-2008 15:00	09-APR-2008 15:00	10-APR-2008 15:00	15-APR-2008 15:00	15-APR-2008 15:00
				EM0802745-126	EM0802745-140	EM0802745-141	EM0802745-205	EM0802745-206
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G59/1.0 Client sampling date / time: 11-APR-2008 15:00 EM0802745-126	4A/QS-4 09-APR-2008 15:00 EM0802745-140	4A/QS-5 10-APR-2008 15:00 EM0802745-141	4A/G26/0.25 15-APR-2008 15:00 EM0802745-205	4A/G26/0.5 15-APR-2008 15:00 EM0802745-206
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**66.8**	**75.5**	----	**76.9**	**84.2**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**67.8**	**76.5**	----	**79.1**	**87.0**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**77.3**	----	**75.7**	**65.1**	**72.7**
2-Chlorophenol-D4	93951-73-6	0.1	%	**87.2**	----	**84.7**	**66.7**	**75.4**
2.4.6-Tribromophenol	118-79-6	0.1	%	**44.2**	----	**45.2**	**48.2**	**53.1**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**86.5**	----	**84.3**	**69.1**	**78.6**
Anthracene-d10	1719-06-8	0.1	%	**91.8**	----	**89.3**	**66.8**	**80.4**
4-Terphenyl-d14	1718-51-0	0.1	%	**86.1**	----	**83.8**	**68.6**	**80.4**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**93.3**	----	**97.7**	**93.2**	**94.9**
Toluene-D8	2037-26-5	0.1	%	**91.2**	----	**93.4**	**94.6**	**90.4**
4-Bromofluorobenzene	460-00-4	0.1	%	**95.9**	----	**99.5**	**99.3**	**95.2**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G26/1.0	4A/G28/0.25	4A/G28/0.5	4A/G28/1.0	4A/G33/0.25
				Client sampling date / time: 15-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00
				EM0802745-207	EM0802745-211	EM0802745-212	EM0802745-213	EM0802745-226
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	**7.7**	**8.3**	----	**7.7**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**5.9**	**3.6**	**7.1**	**4.7**	**5.6**
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	----	<5	<5	<5	<5
Arsenic	7440-38-2	5	mg/kg	----	<5	**5**	<5	**5**
Barium	7440-39-3	10	mg/kg	----	**30**	**40**	**120**	**80**
Beryllium	7440-41-7	1	mg/kg	----	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	----	<50	<50	<50	<50
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	**28**	**42**	**27**	**30**
Cobalt	7440-48-4	2	mg/kg	----	**7**	**20**	**11**	**12**
Copper	7440-50-8	5	mg/kg	----	**10**	**19**	**17**	**18**
Lead	7439-92-1	5	mg/kg	----	**8**	**10**	**9**	**12**
Manganese	7439-96-5	5	mg/kg	----	**158**	**182**	**223**	**306**
Molybdenum	7439-98-7	2	mg/kg	----	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	----	**18**	**29**	**28**	**29**
Selenium	7782-49-2	5	mg/kg	----	<5	<5	<5	<5
Tin	7440-31-5	5	mg/kg	----	<5	<5	<5	<5
Vanadium	7440-62-2	5	mg/kg	----	**33**	**43**	**34**	**38**
Zinc	7440-66-6	5	mg/kg	----	**28**	**31**	**37**	**36**
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/G26/1.0	4A/G28/0.25	4A/G28/0.5	4A/G28/1.0	4A/G33/0.25
				Client sampling date / time	15-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00
					EM0802745-207	EM0802745-211	EM0802745-212	EM0802745-213	EM0802745-226
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G26/1.0	4A/G28/0.25	4A/G28/0.5	4A/G28/1.0	4A/G33/0.25
				Client sampling date / time: 15-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00	14-APR-2008 15:00
				EM0802745-207	EM0802745-211	EM0802745-212	EM0802745-213	EM0802745-226
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**81.8**	**91.8**	**80.0**	**72.3**	**87.2**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**84.5**	**93.4**	**81.3**	**73.8**	**105**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**73.8**	**78.7**	**70.7**	**74.1**	**73.2**
2-Chlorophenol-D4	93951-73-6	0.1	%	**75.5**	**80.1**	**72.4**	**75.4**	**73.6**
2.4.6-Tribromophenol	118-79-6	0.1	%	**50.8**	**45.3**	**44.1**	**52.3**	**42.8**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**74.1**	**81.7**	**71.4**	**75.6**	**74.5**
Anthracene-d10	1719-06-8	0.1	%	**78.9**	**81.8**	**78.7**	**76.2**	**76.6**
4-Terphenyl-d14	1718-51-0	0.1	%	**77.0**	**82.6**	**76.7**	**76.2**	**75.5**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**93.8**	**95.5**	**76.3**	**78.9**	**78.2**
Toluene-D8	2037-26-5	0.1	%	**92.1**	**91.0**	**93.0**	**90.5**	**95.9**
4-Bromofluorobenzene	460-00-4	0.1	%	**95.5**	**95.6**	**80.4**	**82.2**	**85.0**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G33/0.5	4A/G33/1.0	4A/QS-3	----	----
				Client sampling date / time: 14-APR-2008 15:00	14-APR-2008 15:00	15-APR-2008 15:00	----	----
				EM0802745-227	EM0802745-228	EM0802745-256	----	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**7.6**	**8.2**	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**4.6**	**5.9**	**2.5**	----	----
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	----	----
Arsenic	7440-38-2	5	mg/kg	<5	----	<5	----	----
Barium	7440-39-3	10	mg/kg	**60**	----	**30**	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	<1	----	----
Boron	7440-42-8	50	mg/kg	<50	----	<50	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	----
Chromium	7440-47-3	2	mg/kg	**29**	----	**30**	----	----
Cobalt	7440-48-4	2	mg/kg	**10**	----	**7**	----	----
Copper	7440-50-8	5	mg/kg	**11**	----	**12**	----	----
Lead	7439-92-1	5	mg/kg	**12**	----	**7**	----	----
Manganese	7439-96-5	5	mg/kg	**396**	----	**109**	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	----
Nickel	7440-02-0	2	mg/kg	**17**	----	**21**	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	<5	----	----
Tin	7440-31-5	5	mg/kg	<5	----	<5	----	----
Vanadium	7440-62-2	5	mg/kg	**36**	----	**33**	----	----
Zinc	7440-66-6	5	mg/kg	**31**	----	**27**	----	----
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/G33/0.5	4A/G33/1.0	4A/QS-3	----	----
				Client sampling date / time: 14-APR-2008 15:00	14-APR-2008 15:00	15-APR-2008 15:00	----	----
				EM0802745-227	EM0802745-228	EM0802745-256	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL				Client sample ID	4A/G33/0.5	4A/G33/1.0	4A/QS-3	----	----
				Client sampling date / time	14-APR-2008 15:00	14-APR-2008 15:00	15-APR-2008 15:00	----	----
Compound	CAS Number	LOR	Unit		EM0802745-227	EM0802745-228	EM0802745-256	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.1	%		98.4	93.2	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		118	107	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		61.8	83.5	85.1	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%		62.8	82.8	85.4	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%		39.8	75.2	90.8	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		63.8	86.3	89.3	----	----
Anthracene-d10	1719-06-8	0.1	%		64.6	91.4	89.1	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		63.2	95.9	96.8	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		82.7	76.2	80.9	----	----
Toluene-D8	2037-26-5	0.1	%		92.6	91.7	94.9	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		81.4	80.6	86.3	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/TB-1 Client sampling date / time: 15-APR-2008 15:00 EM0802745-146	4A/RB-1 07-APR-2008 15:00 EM0802745-147	4A/TB-2 08-APR-2008 15:00 EM0802745-148	4A/RB-2 08-APR-2008 15:00 EM0802745-149	4A/TB-3 15-APR-2008 15:00 EM0802745-150
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	----	----	<0.001	<0.001	----
Arsenic	7440-38-2	0.001	mg/L	----	----	<0.001	<0.001	----
Beryllium	7440-41-7	0.001	mg/L	----	----	<0.001	<0.001	----
Barium	7440-39-3	0.001	mg/L	----	----	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	----	----	<0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	----	----	<0.001	<0.001	----
Cobalt	7440-48-4	0.001	mg/L	----	----	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L	----	----	<0.001	<0.001	----
Lead	7439-92-1	0.001	mg/L	----	----	<0.001	<0.001	----
Manganese	7439-96-5	0.001	mg/L	----	----	<0.001	<0.001	----
Molybdenum	7439-98-7	0.001	mg/L	----	----	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L	----	----	<0.001	<0.001	----
Selenium	7782-49-2	0.010	mg/L	----	----	<0.010	<0.010	----
Tin	7440-31-5	0.001	mg/L	----	----	<0.001	<0.001	----
Vanadium	7440-62-2	0.01	mg/L	----	----	<0.01	<0.01	----
Zinc	7440-66-6	0.005	mg/L	----	----	<0.005	<0.005	----
Boron	7440-42-8	0.05	mg/L	----	----	<0.05	<0.05	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	<0.0001	<0.0001	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	----	----	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	----	----	----	----	<1.0
Acenaphthene	83-32-9	1.0	µg/L	----	----	----	----	<1.0
Fluorene	86-73-7	1.0	µg/L	----	----	----	----	<1.0
Phenanthrene	85-01-8	1.0	µg/L	----	----	----	----	<1.0
Anthracene	120-12-7	1.0	µg/L	----	----	----	----	<1.0
Fluoranthene	206-44-0	1.0	µg/L	----	----	----	----	<1.0
Pyrene	129-00-0	1.0	µg/L	----	----	----	----	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	----	----	<1.0
Chrysene	218-01-9	1.0	µg/L	----	----	----	----	<1.0
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	----	----	----	----	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	----	----	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	----	----	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	----	----	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	----	----	<1.0
EP080/071: Total Petroleum Hydrocarbons								
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----

Analytical Results

Sub-Matrix: WATER				Client sample ID	4A/TB-1	4A/RB-1	4A/TB-2	4A/RB-2	4A/TB-3
				Client sampling date / time	15-APR-2008 15:00	07-APR-2008 15:00	08-APR-2008 15:00	08-APR-2008 15:00	15-APR-2008 15:00
Compound	CAS Number	LOR	Unit		EM0802745-146	EM0802745-147	EM0802745-148	EM0802745-149	EM0802745-150
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		----	----	----	----	36.8
2-Chlorophenol-D4	93951-73-6	0.1	%		----	----	----	----	60.6
2.4.6-Tribromophenol	118-79-6	0.1	%		----	----	----	----	74.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		----	----	----	----	79.6
Anthracene-d10	1719-06-8	0.1	%		----	----	----	----	73.8
4-Terphenyl-d14	1718-51-0	0.1	%		----	----	----	----	77.2

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/RB-3	4A/TB-4	4A/RB-4	4A/RB6	4A/RB7
				Client sampling date / time: 15-APR-2008 15:00	15-APR-2008 15:00	15-APR-2008 15:00	14-APR-2008 15:00	15-APR-2008 15:00
				EM0802745-151	EM0802745-152	EM0802745-153	EM0802745-259	EM0802745-260
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	----	----	----	----	<0.001
Arsenic	7440-38-2	0.001	mg/L	----	----	----	----	<0.001
Beryllium	7440-41-7	0.001	mg/L	----	----	----	----	<0.001
Barium	7440-39-3	0.001	mg/L	----	----	----	----	<0.001
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	----	<0.0001
Chromium	7440-47-3	0.001	mg/L	----	----	----	----	<0.001
Cobalt	7440-48-4	0.001	mg/L	----	----	----	----	<0.001
Copper	7440-50-8	0.001	mg/L	----	----	----	----	<0.001
Lead	7439-92-1	0.001	mg/L	----	----	----	----	<0.001
Manganese	7439-96-5	0.001	mg/L	----	----	----	----	<0.001
Molybdenum	7439-98-7	0.001	mg/L	----	----	----	----	<0.001
Nickel	7440-02-0	0.001	mg/L	----	----	----	----	<0.001
Selenium	7782-49-2	0.010	mg/L	----	----	----	----	<0.010
Tin	7440-31-5	0.001	mg/L	----	----	----	----	<0.001
Vanadium	7440-62-2	0.01	mg/L	----	----	----	----	<0.01
Zinc	7440-66-6	0.005	mg/L	----	----	----	----	<0.005
Boron	7440-42-8	0.05	mg/L	----	----	----	----	<0.05
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	----	----	----	----	<0.0001
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C10 - C14 Fraction	----	50	µg/L	----	<50	<50	<50	----

Analytical Results

Sub-Matrix: WATER				Client sample ID	4A/RB-3	4A/TB-4	4A/RB-4	4A/RB6	4A/RB7
				Client sampling date / time	15-APR-2008 15:00	15-APR-2008 15:00	15-APR-2008 15:00	14-APR-2008 15:00	15-APR-2008 15:00
Compound	CAS Number	LOR	Unit		EM0802745-151	EM0802745-152	EM0802745-153	EM0802745-259	EM0802745-260
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	µg/L		----	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L		----	<50	<50	<50	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		**42.1**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%		**70.3**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%		**81.5**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		**85.0**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		**79.0**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		**82.4**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/RB5	----	----	----	----
				Client sampling date / time: 11-APR-2008 15:00	----	----	----	----
				EM0802745-261	**----**	**----**	**----**	**----**
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----
Barium	7440-39-3	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Selenium	7782-49-2	0.010	mg/L	<0.010	----	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **COMPOSITE**

Compound	CAS Number	Recovery Limits (%) Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	130
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	53	140
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	19	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	42.4	131
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	130
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	53	140
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	76	124
Toluene-D8	2037-26-5	76	124
4-Bromofluorobenzene	460-00-4	72	119
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	19	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	27	130
Phenol-d6	13127-88-3	22	126
2-Chlorophenol-D4	93951-73-6	25	126
2.4.6-Tribromophenol	118-79-6	11	108

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	21	134
1.2-Dichlorobenzene-D4	2199-69-1	22	119
2-Fluorobiphenyl	321-60-8	23	133
Anthracene-d10	1719-06-8	49	133
4-Terphenyl-d14	1718-51-0	43	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	70	130
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	94
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	10	123
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0802745**	Page	: 1 of 25
Amendment	: **3**		
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
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Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 17-APR-2008
Sampler	: EB	Issue Date	: 02-JUN-2008
Order number	: 21189		
		No. of samples received	: 261
Quote number	: ----	No. of samples analysed	: 102

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils)							
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0	**07-APR-2008**	**15-APR-2008**	14-APR-2008	×	**15-APR-2008**	15-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/C38	**07-APR-2008**	**22-APR-2008**	14-APR-2008	×	**22-APR-2008**	22-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G40/0.5, 4A/G49/0.25, 4A/G49/0.5	**08-APR-2008**	**15-APR-2008**	15-APR-2008	✓	**15-APR-2008**	15-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/C1, 4A/C2, 4A/C28, 4A/C31, 4A/C42, 4A/C43	**08-APR-2008**	**22-APR-2008**	15-APR-2008	×	**22-APR-2008**	22-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G9/0.25, 4A/G9/0.5, 4A/G11/0.25, 4A/G11/0.5	**09-APR-2008**	**16-APR-2008**	16-APR-2008	✓	**16-APR-2008**	16-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/C9	**09-APR-2008**	**22-APR-2008**	16-APR-2008	×	**22-APR-2008**	22-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G1/0.25, 4A/G1/0.5, 4A/G4/0.25, 4A/G4/0.5, 4A/G4/1.0, 4A/G16/0.25, 4A/G16/0.5, 4A/G16/1.0	**10-APR-2008**	**16-APR-2008**	17-APR-2008	✓	**16-APR-2008**	16-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/C14	**10-APR-2008**	**22-APR-2008**	17-APR-2008	×	**22-APR-2008**	22-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G21/0.25, 4A/G21/0.5, 4A/G23/0.25, 4A/G23/0.5, 4A/G23/1.0, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0	**11-APR-2008**	**16-APR-2008**	18-APR-2008	✓	**16-APR-2008**	16-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/C22, 4A/C27, 4A/G28/0.25, 4A/G28/0.5, 4A/G33/0.25, 4A/G33/0.5, 4A/G33/1.0	**14-APR-2008**	**22-APR-2008**	21-APR-2008	×	**22-APR-2008**	22-APR-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils) - Continued							
Soil Glass Jar - Unpreserved 4A/C47, 4A/G26/0.25, 4A/G26/0.5	**15-APR-2008**	**22-APR-2008**	22-APR-2008	✓	**22-APR-2008**	22-APR-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0, 4A/C37, 4A/C38	**07-APR-2008**	**----**	----	----	**21-APR-2008**	14-APR-2008	✘
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G40/0.5, 4A/G40/1.0, 4A/G40/0.1, 4A/G49/0.25, 4A/G49/0.5, 4A/G49/1.0, 4A/C1, 4A/C2, 4A/C3, 4A/C28, 4A/C29, 4A/C30, 4A/C31, 4A/C32, 4A/C34, 4A/C35, 4A/C36, 4A/C40, 4A/C41, 4A/C42, 4A/C43, 4A/C44	**08-APR-2008**	**----**	----	----	**21-APR-2008**	15-APR-2008	✘
Soil Glass Jar - Unpreserved 4A/G7/0.25, 4A/G9/0.25, 4A/G9/0.5, 4A/G9/1.0, 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0, 4A/QS-4, 4A/C4, 4A/C5, 4A/C7, 4A/C8, 4A/C9	**09-APR-2008**	**----**	----	----	**21-APR-2008**	16-APR-2008	✘
Soil Glass Jar - Unpreserved 4A/G1/0.25, 4A/G1/0.5, 4A/G1/1.0, 4A/G4/0.25, 4A/G4/0.5, 4A/G4/1.0, 4A/G14/0.1, 4A/G16/0.25, 4A/G16/0.5, 4A/G16/1.0, 4A/QS-5, 4A/C10, 4A/C11, 4A/C13, 4A/C14, 4A/C15	**10-APR-2008**	**----**	----	----	**21-APR-2008**	17-APR-2008	✘
Soil Glass Jar - Unpreserved 4A/G21/0.25, 4A/G21/0.5, 4A/G21/1.0, 4A/G23/0.25, 4A/G23/0.5, 4A/G23/1.0, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0, 4A/C16, 4A/C17, 4A/C18	**11-APR-2008**	**----**	----	----	**21-APR-2008**	18-APR-2008	✘

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content - Continued							
Soil Glass Jar - Unpreserved 4A/C19, 4A/C20, 4A/C21, 4A/C22, 4A/C23, 4A/C24, 4A/C25, 4A/C26, 4A/C27, 4A/G28/0.25, 4A/G28/0.5, 4A/G28/1.0, 4A/G33/0.25, 4A/G33/0.5, 4A/G33/1.0	**14-APR-2008**	**----**	----	----	**21-APR-2008**	21-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/C46, 4A/C47, 4A/C48, 4A/G26/0.25, 4A/G26/0.5, 4A/G26/1.0, 4A/QS-3	**15-APR-2008**	**----**	----	----	**22-APR-2008**	22-APR-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0	**07-APR-2008**	**21-APR-2008**	04-OCT-2008	✓	**22-APR-2008**	04-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/C37, 4A/C38	**07-APR-2008**	**22-APR-2008**	04-OCT-2008	✓	**23-APR-2008**	04-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G40/0.5, 4A/G40/1.0, 4A/G40/0.1, 4A/G49/0.25, 4A/G49/0.5	**08-APR-2008**	**21-APR-2008**	05-OCT-2008	✓	**22-APR-2008**	05-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/C1, 4A/C2, 4A/C3, 4A/C28, 4A/C29, 4A/C30, 4A/C31, 4A/C32, 4A/C34, 4A/C35, 4A/C36, 4A/C40, 4A/C41, 4A/C42, 4A/C43, 4A/C44	**08-APR-2008**	**22-APR-2008**	05-OCT-2008	✓	**23-APR-2008**	05-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/G7/0.25, 4A/G9/0.25, 4A/G9/0.5, 4A/G9/1.0, 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0	**09-APR-2008**	**21-APR-2008**	06-OCT-2008	✓	**22-APR-2008**	06-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/C4, 4A/C5, 4A/C7, 4A/C8, 4A/C9	**09-APR-2008**	**22-APR-2008**	06-OCT-2008	✓	**23-APR-2008**	06-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/G1/0.25, 4A/G1/0.5, 4A/G1/1.0, 4A/G4/0.25, 4A/G4/0.5, 4A/G14/0.1, 4A/G16/0.25, 4A/G16/0.5, 4A/QS-5	**10-APR-2008**	**21-APR-2008**	07-OCT-2008	✓	**22-APR-2008**	07-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/C10, 4A/C11, 4A/C13, 4A/C14, 4A/C15	**10-APR-2008**	**22-APR-2008**	07-OCT-2008	✓	**23-APR-2008**	07-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/G21/0.25, 4A/G21/0.5, 4A/G21/1.0, 4A/G23/0.25, 4A/G23/0.5, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0	**11-APR-2008**	**21-APR-2008**	08-OCT-2008	✓	**22-APR-2008**	08-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/C16, 4A/C17	**11-APR-2008**	**22-APR-2008**	08-OCT-2008	✓	**23-APR-2008**	08-OCT-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005T: Total Metals by ICP-AES - Continued							
Soil Glass Jar - Unpreserved 4A/G28/0.25, 4A/G28/0.5, 4A/G28/1.0, 4A/G33/0.25, 4A/G33/0.5	**14-APR-2008**	**21-APR-2008**	11-OCT-2008	✓	**22-APR-2008**	11-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/C19, 4A/C20, 4A/C21, 4A/C22, 4A/C23, 4A/C25, 4A/C26, 4A/C27	**14-APR-2008**	**22-APR-2008**	11-OCT-2008	✓	**23-APR-2008**	11-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/G26/0.25, 4A/G26/0.5, 4A/QS-3	**15-APR-2008**	**21-APR-2008**	12-OCT-2008	✓	**22-APR-2008**	12-OCT-2008	✓
Soil Glass Jar - Unpreserved 4A/C46, 4A/C47, 4A/C48	**15-APR-2008**	**22-APR-2008**	12-OCT-2008	✓	**23-APR-2008**	12-OCT-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Mercury by FIMS							
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0	**07-APR-2008**	**21-APR-2008**	04-OCT-2008	✓	**24-APR-2008**	05-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C37, 4A/C38	**07-APR-2008**	**22-APR-2008**	04-OCT-2008	✓	**24-APR-2008**	05-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G40/0.5, 4A/G40/1.0, 4A/G40/0.1, 4A/G49/0.25, 4A/G49/0.5	**08-APR-2008**	**21-APR-2008**	05-OCT-2008	✓	**24-APR-2008**	06-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C1, 4A/C2, 4A/C3, 4A/C28, 4A/C29, 4A/C30, 4A/C31, 4A/C32, 4A/C34, 4A/C35, 4A/C36, 4A/C40, 4A/C41, 4A/C42, 4A/C43, 4A/C44	**08-APR-2008**	**22-APR-2008**	05-OCT-2008	✓	**24-APR-2008**	06-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G7/0.25, 4A/G9/0.25, 4A/G9/0.5, 4A/G9/1.0, 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0	**09-APR-2008**	**21-APR-2008**	06-OCT-2008	✓	**24-APR-2008**	07-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C4, 4A/C5, 4A/C7, 4A/C8, 4A/C9	**09-APR-2008**	**22-APR-2008**	06-OCT-2008	✓	**24-APR-2008**	07-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G1/0.25, 4A/G1/0.5, 4A/G1/1.0, 4A/G4/0.25, 4A/G4/0.5, 4A/G14/0.1, 4A/G16/0.25, 4A/G16/0.5, 4A/QS-5	**10-APR-2008**	**21-APR-2008**	07-OCT-2008	✓	**24-APR-2008**	08-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C10, 4A/C11, 4A/C13, 4A/C14, 4A/C15	**10-APR-2008**	**22-APR-2008**	07-OCT-2008	✓	**24-APR-2008**	08-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G21/0.25, 4A/G21/0.5, 4A/G21/1.0, 4A/G23/0.25, 4A/G23/0.5, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0	**11-APR-2008**	**21-APR-2008**	08-OCT-2008	✓	**24-APR-2008**	09-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C16, 4A/C17	**11-APR-2008**	**22-APR-2008**	08-OCT-2008	✓	**24-APR-2008**	09-MAY-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Mercury by FIMS - Continued							
Soil Glass Jar - Unpreserved 4A/G28/0.25, 4A/G28/0.5, 4A/G28/1.0, 4A/G33/0.25, 4A/G33/0.5	**14-APR-2008**	**21-APR-2008**	11-OCT-2008	✓	**24-APR-2008**	12-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C19, 4A/C20, 4A/C21, 4A/C22, 4A/C23, 4A/C25, 4A/C26, 4A/C27	**14-APR-2008**	**22-APR-2008**	11-OCT-2008	✓	**24-APR-2008**	12-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G26/0.25, 4A/G26/0.5, 4A/QS-3	**15-APR-2008**	**21-APR-2008**	12-OCT-2008	✓	**24-APR-2008**	13-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C46, 4A/C47, 4A/C48	**15-APR-2008**	**22-APR-2008**	12-OCT-2008	✓	**24-APR-2008**	13-MAY-2008	✓
EG048: Hexavalent Chromium (Alkaline Digest)							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**21-APR-2008**	07-MAY-2008	✓	**23-APR-2008**	28-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**21-APR-2008**	08-MAY-2008	✓	**23-APR-2008**	28-APR-2008	✓
EK026G: Total Cyanide By Discrete Analyser							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**21-APR-2008**	16-APR-2008	×	**22-APR-2008**	05-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**21-APR-2008**	17-APR-2008	×	**22-APR-2008**	05-MAY-2008	✓
EK040T: Fluoride Total							
Pulp Bag 4A/G7/0.25	**09-APR-2008**	**----**	----	----	**18-APR-2008**	16-APR-2008	×
Pulp Bag 4A/G14/0.1	**10-APR-2008**	**----**	----	----	**18-APR-2008**	17-APR-2008	×
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**23-APR-2008**	23-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**23-APR-2008**	24-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0, 4A/C38	**07-APR-2008**	**21-APR-2008**	21-APR-2008	✓	**24-MAR-2008**	31-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C1, 4A/C2, 4A/C28, 4A/C30, 4A/C42, 4A/C43	**08-APR-2008**	**21-APR-2008**	22-APR-2008	✓	**24-MAR-2008**	31-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G49/0.25, 4A/G49/0.5, 4A/G49/1.0	**08-APR-2008**	**22-APR-2008**	22-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G9/0.25, 4A/G9/0.5, 4A/G9/1.0, 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0, 4A/QS-4, 4A/C9	**09-APR-2008**	**22-APR-2008**	23-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G1/0.25, 4A/G1/0.5, 4A/G1/1.0, 4A/G4/0.25, 4A/G4/0.5, 4A/G4/1.0, 4A/G16/0.25, 4A/G16/0.5, 4A/G16/1.0, 4A/C14	**10-APR-2008**	**22-APR-2008**	24-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G21/0.25, 4A/G21/0.5, 4A/G21/1.0, 4A/G23/0.25, 4A/G23/0.5, 4A/G23/1.0, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0	**11-APR-2008**	**22-APR-2008**	25-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/C22, 4A/C27, 4A/G28/0.25, 4A/G28/0.5, 4A/G28/1.0, 4A/G33/0.25, 4A/G33/0.5, 4A/G33/1.0	**14-APR-2008**	**22-APR-2008**	28-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/C47, 4A/G26/0.25, 4A/G26/0.5, 4A/G26/1.0	**15-APR-2008**	**22-APR-2008**	29-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0, 4A/C38	**07-APR-2008**	**21-APR-2008**	21-APR-2008	✓	**24-MAR-2008**	31-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C1, 4A/C2, 4A/C28, 4A/C30, 4A/C42, 4A/C43	**08-APR-2008**	**21-APR-2008**	22-APR-2008	✓	**24-MAR-2008**	31-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G49/0.25, 4A/G49/0.5, 4A/G49/1.0	**08-APR-2008**	**22-APR-2008**	22-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0, 4A/QS-4, 4A/C9	**09-APR-2008**	**22-APR-2008**	23-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G16/0.25, 4A/G16/0.5, 4A/G16/1.0, 4A/C14	**10-APR-2008**	**22-APR-2008**	24-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G21/0.25, 4A/G21/0.5, 4A/G21/1.0, 4A/G23/0.25, 4A/G23/0.5, 4A/G23/1.0, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0	**11-APR-2008**	**22-APR-2008**	25-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/C22, 4A/C27, 4A/G28/0.25, 4A/G28/0.5, 4A/G28/1.0, 4A/G33/0.25, 4A/G33/0.5, 4A/G33/1.0	**14-APR-2008**	**22-APR-2008**	28-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/C47, 4A/G26/0.25, 4A/G26/0.5, 4A/G26/1.0	**15-APR-2008**	**22-APR-2008**	29-APR-2008	✓	**25-MAR-2008**	01-JUN-2008	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**21-APR-2008**	23-APR-2008	✓	**21-APR-2008**	23-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**21-APR-2008**	24-APR-2008	✓	**21-APR-2008**	24-APR-2008	✓
EP074I: Volatile Halogenated Compounds							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**21-APR-2008**	23-APR-2008	✓	**21-APR-2008**	23-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**21-APR-2008**	24-APR-2008	✓	**21-APR-2008**	24-APR-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0	**07-APR-2008**	**21-APR-2008**	21-APR-2008	✓	**22-APR-2008**	31-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/C1, 4A/C2, 4A/C3, 4A/C28, 4A/C29, 4A/C30, 4A/C34, 4A/C35, 4A/C36, 4A/C40, 4A/C41, 4A/C42	**08-APR-2008**	**21-APR-2008**	22-APR-2008	✓	**22-APR-2008**	31-MAY-2008	✓
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G40/0.5, 4A/G40/1.0, 4A/G40/0.1, 4A/G49/0.25, 4A/G49/0.5, 4A/G49/1.0	**08-APR-2008**	**22-APR-2008**	22-APR-2008	✓	**22-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G9/0.25, 4A/G9/0.5, 4A/G9/1.0, 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0, 4A/C7, 4A/C9	**09-APR-2008**	**22-APR-2008**	23-APR-2008	✓	**22-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G1/0.25, 4A/G1/0.5, 4A/G1/1.0, 4A/G4/0.25, 4A/G4/0.5, 4A/G4/1.0, 4A/G16/0.25, 4A/G16/0.5, 4A/G16/1.0, 4A/QS-5, 4A/C11, 4A/C13, 4A/C15	**10-APR-2008**	**22-APR-2008**	24-APR-2008	✓	**22-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G21/0.25, 4A/G21/0.5, 4A/G21/1.0, 4A/G23/0.25, 4A/G23/0.5, 4A/G23/1.0, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0, 4A/C18	**11-APR-2008**	**22-APR-2008**	25-APR-2008	✓	**22-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/C19, 4A/C23, 4A/C24, 4A/G28/0.25, 4A/G28/0.5, 4A/G28/1.0, 4A/G33/0.25, 4A/G33/0.5, 4A/G33/1.0	**14-APR-2008**	**22-APR-2008**	28-APR-2008	✓	**23-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/C46, 4A/C47, 4A/C48, 4A/G26/0.25, 4A/G26/0.5, 4A/G26/1.0, 4A/QS-3	**15-APR-2008**	**22-APR-2008**	29-APR-2008	✓	**23-APR-2008**	01-JUN-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075A: Phenolic Compounds (Halogenated)							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**23-APR-2008**	23-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**23-APR-2008**	24-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓
EP075A: Phenolic Compounds (Non-halogenated)							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**23-APR-2008**	23-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**23-APR-2008**	24-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**23-APR-2008**	23-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**23-APR-2008**	24-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓
EP075I: Organochlorine Pesticides							
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**23-APR-2008**	23-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**23-APR-2008**	24-APR-2008	✓	**24-APR-2008**	02-JUN-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0	**07-APR-2008**	**21-APR-2008**	21-APR-2008	✓	**22-APR-2008**	21-APR-2008	×
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G40/0.5, 4A/G40/1.0, 4A/G49/0.25, 4A/G49/0.5, 4A/G49/1.0	**08-APR-2008**	**21-APR-2008**	22-APR-2008	✓	**22-APR-2008**	22-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G40/0.25, 4A/G40/0.5, 4A/G40/1.0, 4A/G49/0.25, 4A/G49/0.5, 4A/G49/1.0	**08-APR-2008**	**22-APR-2008**	22-APR-2008	✓	**22-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G7/0.25	**09-APR-2008**	**21-APR-2008**	23-APR-2008	✓	**21-APR-2008**	23-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G9/0.25, 4A/G9/0.5, 4A/G9/1.0, 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0	**09-APR-2008**	**21-APR-2008**	23-APR-2008	✓	**22-APR-2008**	23-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G7/0.25, 4A/G9/0.25, 4A/G9/0.5, 4A/G9/1.0, 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0	**09-APR-2008**	**22-APR-2008**	23-APR-2008	✓	**22-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G14/0.1	**10-APR-2008**	**21-APR-2008**	24-APR-2008	✓	**21-APR-2008**	24-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G1/0.25, 4A/G1/0.5, 4A/G1/1.0, 4A/G4/0.25, 4A/G4/0.5, 4A/G4/1.0, 4A/G16/0.25, 4A/G16/0.5, 4A/G16/1.0, 4A/QS-5	**10-APR-2008**	**21-APR-2008**	24-APR-2008	✓	**22-APR-2008**	24-APR-2008	✓
Soil Glass Jar - Unpreserved 4A/G1/0.25, 4A/G1/0.5, 4A/G1/1.0, 4A/G4/0.25, 4A/G4/0.5, 4A/G4/1.0, 4A/G14/0.1, 4A/G16/0.25, 4A/G16/0.5, 4A/G16/1.0, 4A/QS-5	**10-APR-2008**	**22-APR-2008**	24-APR-2008	✓	**22-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved 4A/G21/0.25, 4A/G21/0.5, 4A/G21/1.0, 4A/G23/0.25, 4A/G23/0.5, 4A/G23/1.0, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0	**11-APR-2008**	**21-APR-2008**	25-APR-2008	✓	**22-APR-2008**	25-APR-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons - Continued								
Soil Glass Jar - Unpreserved								
4A/G21/0.25, 4A/G21/1.0, 4A/G23/0.5, 4A/G59/0.25, 4A/G59/1.0	4A/G21/0.5, 4A/G23/0.25, 4A/G23/1.0, 4A/G59/0.5,	**11-APR-2008**	**22-APR-2008**	25-APR-2008	✓	**22-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved								
4A/G28/0.25, 4A/G28/1.0, 4A/G33/0.5,	4A/G28/0.5, 4A/G33/0.25, 4A/G33/1.0	**14-APR-2008**	**21-APR-2008**	28-APR-2008	✓	**22-APR-2008**	28-APR-2008	✓
Soil Glass Jar - Unpreserved								
4A/G28/0.25, 4A/G28/1.0, 4A/G33/0.5,	4A/G28/0.5, 4A/G33/0.25, 4A/G33/1.0	**14-APR-2008**	**22-APR-2008**	28-APR-2008	✓	**23-APR-2008**	01-JUN-2008	✓
Soil Glass Jar - Unpreserved								
4A/G26/0.25, 4A/G26/1.0,	4A/G26/0.5, 4A/QS-3	**15-APR-2008**	**21-APR-2008**	29-APR-2008	✓	**22-APR-2008**	29-APR-2008	✓
Soil Glass Jar - Unpreserved								
4A/G26/0.25, 4A/G26/1.0,	4A/G26/0.5, 4A/QS-3	**15-APR-2008**	**22-APR-2008**	29-APR-2008	✓	**23-APR-2008**	01-JUN-2008	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered								
4A/TB-2,	4A/RB-2	**08-APR-2008**	**---**	---	----	**22-APR-2008**	05-OCT-2008	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered								
4A/RB5		**11-APR-2008**	**---**	---	----	**22-APR-2008**	08-OCT-2008	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered								
4A/RB7		**15-APR-2008**	**---**	---	----	**22-APR-2008**	12-OCT-2008	✓
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered								
4A/TB-2,	4A/RB-2	**08-APR-2008**	**----**	----	----	**23-APR-2008**	06-MAY-2008	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered								
4A/RB5		**11-APR-2008**	**----**	----	----	**23-APR-2008**	09-MAY-2008	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered								
4A/RB7		**15-APR-2008**	**----**	----	----	**23-APR-2008**	13-MAY-2008	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved								
4A/TB-3,	4A/RB-3	**15-APR-2008**	**18-APR-2008**	22-APR-2008	✓	**22-APR-2008**	28-MAY-2008	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved 4A/RB-1	**07-APR-2008**	**18-APR-2008**	14-APR-2008	×	**22-APR-2008**	28-MAY-2008	✓
Amber Glass Bottle - Unpreserved 4A/RB6	**14-APR-2008**	**18-APR-2008**	21-APR-2008	✓	**22-APR-2008**	28-MAY-2008	✓
Amber Glass Bottle - Unpreserved 4A/TB-1, 4A/TB-4, 4A/RB-4	**15-APR-2008**	**18-APR-2008**	22-APR-2008	✓	**22-APR-2008**	28-MAY-2008	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	11	104	**10.6**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	8	70	**11.4**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PCB - VIC EPA 448.3 Screen	EP066-EM	2	13	**15.4**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	8	70	**11.4**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	6	50	**12.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Semivolatile Organic Compounds - Waste Classification	EP075-EM	2	13	**15.4**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Cyanide By Discrete Analyser	EK026G	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Fluoride	EK040T	1	20	**5.0**	**10.0**	×	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Hexavalent Chromium by Alkaline Digestion	EG048	2	17	**11.8**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	12	120	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	12	118	**10.2**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	6	50	**12.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	6	60	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds - Ultra-trace	EP074-UT	2	18	**11.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	4	70	**5.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PCB - VIC EPA 448.3 Screen	EP066-EM	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	4	70	**5.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Cyanide By Discrete Analyser	EK026G	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Fluoride	EK040T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	17	**5.9**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	6	120	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	6	118	**5.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	4	50	**8.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	60	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	18	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	4	70	**5.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PCB - VIC EPA 448.3 Screen	EP066-EM	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	4	70	**5.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Cyanide By Discrete Analyser	EK026G	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Fluoride	EK040T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	17	**5.9**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	6	120	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	6	118	**5.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	4	50	**8.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	60	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	18	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	4	70	**5.7**	**5.0**	✓	ALS QCS3 requirement
PCB - VIC EPA 448.3 Screen	EP066-EM	1	13	**7.7**	**5.0**	✓	ALS QCS3 requirement
Pesticides by GCMS	EP068	4	70	**5.7**	**5.0**	✓	ALS QCS3 requirement
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	13	**7.7**	**5.0**	✓	ALS QCS3 requirement
Total Cyanide By Discrete Analyser	EK026G	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Fluoride	EK040T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	17	**5.9**	**5.0**	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	6	120	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	6	118	**5.1**	**5.0**	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	4	50	**8.0**	**5.0**	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	3	60	**5.0**	**5.0**	✓	ALS QCS3 requirement
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	18	**5.6**	**5.0**	✓	ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	**50.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	5	**20.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	2	**50.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	5	**20.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Asbestos - Count (Solid)	ASB-SOL	SOIL	Asbestos Count on solid matrices using PLM conducted by Subcontracting Laboratory
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (1999) Schedule B(3) (Method 103)
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Total Hexavalent Chromium by Alkaline Digestion	* EG048	SOIL	USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by UV-VIS spectrophotometer following pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Cyanide By Discrete Analyser	EK026G	SOIL	APHA 21st 4500 CN - C & N. Caustic leach extracts of the sample are distilled with sulphuric acid, converting all CN species to HCN. The distillates are analyzed for CN by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Method 403)
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
TPH (C10 - C36) Sum	EP071-SUM	SOIL	In-house: Summation of the results of the semivolatile TPH bands. Results less than the level of reporting contribute zero to the sum.
Volatile Organic Compounds - Ultra-trace	* EP074-UT	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)

Analytical Methods	Method	Matrix	Method Descriptions
Semivolatile Organic Compounds - Waste Classification	* EP075-EM	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 502)
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	USEPA SW846, Method 3060A.
NaOH leach for TCN in Soils	EK026PR	SOIL	APHA 21st ed., 4500 CN- C & N. Samples are extracted by end-over-end tumbling with NaOH.
Sample Compositing	EN020	SOIL	Equal weights of each original soil are taken, then mixed and homogenised. The combined mixture is labelled as a new sample.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids - VIC EPA Screen	ORG17A-EM	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	EM0802745-154	4A/C1	**Manganese**	7439-96-5	20.2 %	0-20%	**RPD exceeds LOR based limits**
Laboratory Control Spike (LCS) Recoveries							
EP075A: Phenolic Compounds (Non-halogenated)	715251-001	----	**2-Methylphenol**	95-48-7	43.5 %	52.1-128%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EM0802897-001	Anonymous	**Barium**	7440-39-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0802745-155	4A/C2	**Barium**	7440-39-3	158 %	70-130%	**Recovery greater than upper data quality objective**
EG005T: Total Metals by ICP-AES	EM0802897-001	Anonymous	**Lead**	7439-92-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0802745-155	4A/C2	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0802745-179	4A/C26	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0802745-002	4A/G1/0.5	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0802745-076	4A/G40/0.5	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0802870-001	Anonymous	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0802745-155	4A/C2	**Molybdenum**	7439-98-7	63.4 %	70-130%	**Recovery less than lower data quality objective**
EG005T: Total Metals by ICP-AES	EM0802897-001	Anonymous	**Zinc**	7440-66-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0802745-179	4A/C26	**Zinc**	7440-66-6	150 %	70-130%	**Recovery greater than upper data quality objective**
EP068A: Organochlorine Pesticides (OC)	EM0802745-227	4A/G33/0.5	**Heptachlor**	76-44-8	56.1 %	70-130%	**Recovery less than lower data quality objective**

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries - Continued							
EP068A: Organochlorine Pesticides (OC)	EM0802745-075	4A/G40/0.25	**Aldrin**	309-00-2	68.0 %	70-130%	**Recovery less than lower data quality objective**
EP068A: Organochlorine Pesticides (OC)	EM0802745-227	4A/G33/0.5	**Endrin**	72-20-8	65.4 %	70-130%	**Recovery less than lower data quality objective**
EP068A: Organochlorine Pesticides (OC)	EM0802745-002	4A/G1/0.5	**4.4`-DDT**	50-29-3	66.8 %	70-130%	**Recovery less than lower data quality objective**
EP075A: Phenolic Compounds (Halogenated)	EM0802745-040	4A/G14/0.1	**2-Chlorophenol**	95-57-8	63.7 %	70-130%	**Recovery less than lower data quality objective**
EP075A: Phenolic Compounds (Halogenated)	EM0802745-040	4A/G14/0.1	**Pentachlorophenol**	87-86-5	49.8 %	70-130%	**Recovery less than lower data quality objective**
EP075A: Phenolic Compounds (Non-halogenated)	EM0802745-040	4A/G14/0.1	**Phenol**	108-95-2	53.8 %	70-130%	**Recovery less than lower data quality objective**
EP075A: Phenolic Compounds (Non-halogenated)	EM0802745-040	4A/G14/0.1	**2-Nitrophenol**	88-75-5	52.2 %	70-130%	**Recovery less than lower data quality objective**
EP075B: Polynuclear Aromatic Hydrocarbons	EM0802745-040	4A/G14/0.1	**Acenaphthene**	83-32-9	67.6 %	70-130%	**Recovery less than lower data quality objective**

- **For all matrices, no Method Blank value outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **SOIL**

Method / **Container** / Client Sample ID(s)	*Extraction / Preparation*			*Analysis*		
	Date extracted	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA002 : pH (Soils)						
Soil Glass Jar - Unpreserved 4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0	15-APR-2008	14-APR-2008	**1**	----	----	----
Soil Glass Jar - Unpreserved 4A/C38	22-APR-2008	14-APR-2008	**8**	----	----	----
Soil Glass Jar - Unpreserved 4A/C1, 4A/C2, 4A/C28, 4A/C31, 4A/C42, 4A/C43	22-APR-2008	15-APR-2008	**7**	----	----	----
Soil Glass Jar - Unpreserved 4A/C9	22-APR-2008	16-APR-2008	**6**	----	----	----
Soil Glass Jar - Unpreserved 4A/C14	22-APR-2008	17-APR-2008	**5**	----	----	----

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA002 : pH (Soils) - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved						
4A/C22, 4A/C27, 4A/G28/0.25, 4A/G28/0.5, 4A/G33/0.25, 4A/G33/0.5, 4A/G33/1.0	22-APR-2008	21-APR-2008	**1**	----	----	----
EA055: Moisture Content						
Soil Glass Jar - Unpreserved						
4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0, 4A/C37, 4A/C38	----	----	----	21-APR-2008	14-APR-2008	**7**
Soil Glass Jar - Unpreserved						
4A/G40/0.25, 4A/G40/0.5, 4A/G40/1.0, 4A/G40/0.1, 4A/G49/0.25, 4A/G49/0.5, 4A/G49/1.0, 4A/C1, 4A/C2, 4A/C3, 4A/C28, 4A/C29, 4A/C30, 4A/C31, 4A/C32, 4A/C34, 4A/C35, 4A/C36, 4A/C40, 4A/C41, 4A/C42, 4A/C43, 4A/C44	----	----	----	21-APR-2008	15-APR-2008	**6**
Soil Glass Jar - Unpreserved						
4A/G7/0.25, 4A/G9/0.25, 4A/G9/0.5, 4A/G9/1.0, 4A/G11/0.25, 4A/G11/0.5, 4A/G11/1.0, 4A/QS-4, 4A/C4, 4A/C5, 4A/C7, 4A/C8, 4A/C9	----	----	----	21-APR-2008	16-APR-2008	**5**
Soil Glass Jar - Unpreserved						
4A/G1/0.25, 4A/G1/0.5, 4A/G1/1.0, 4A/G4/0.25, 4A/G4/0.5, 4A/G4/1.0, 4A/G14/0.1, 4A/G16/0.25, 4A/G16/0.5, 4A/G16/1.0, 4A/QS-5, 4A/C10, 4A/C11, 4A/C13, 4A/C14, 4A/C15	----	----	----	21-APR-2008	17-APR-2008	**4**

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EA055: Moisture Content - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved						
4A/G21/0.25, 4A/G21/0.5, 4A/G21/1.0, 4A/G23/0.25, 4A/G23/0.5, 4A/G23/1.0, 4A/G59/0.25, 4A/G59/0.5, 4A/G59/1.0, 4A/C16, 4A/C17, 4A/C18	----	----	----	21-APR-2008	18-APR-2008	**3**
EK026G: Total Cyanide By Discrete Analyser						
Soil Glass Jar - Unpreserved						
4A/G7/0.25	21-APR-2008	16-APR-2008	**5**	----	----	----
Soil Glass Jar - Unpreserved						
4A/G14/0.1	21-APR-2008	17-APR-2008	**4**	----	----	----
EK040T: Fluoride Total						
Pulp Bag						
4A/G7/0.25	----	----	----	18-APR-2008	16-APR-2008	**2**
Pulp Bag						
4A/G14/0.1	----	----	----	18-APR-2008	17-APR-2008	**1**
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved						
4A/G50/0.25, 4A/G50/0.5, 4A/G50/1.0	----	----	----	22-APR-2008	21-APR-2008	**1**

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP080/071: Total Petroleum Hydrocarbons						
Amber Glass Bottle - Unpreserved						
4A/RB-1	18-APR-2008	14-APR-2008	**4**	----	----	----

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

Matrix: **SOIL**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Total Fluoride	1	20	5.0	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

QUALITY CONTROL REPORT

Work Order	: **EM0802745**	Page	: 1 of 45
Amendment	: **3**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 17-APR-2008
Sampler	: EB	Issue Date	: 02-JUN-2008
Order number	: 21189		
		No. of samples received	: 261
Quote number	: ----	No. of samples analysed	: 102

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Herman Lin	Senior Inorganic Chemist	Inorganics
Kumara Dadallage	Senior Organic Chemist	Organics
Nancy Wang	Instrument Chemist	Organics
Peter Donaghy	Laboratory Supervisor	Newcastle
Terrance Hettipathirana	Senior ICP/MS Chemist	Inorganics
Xingbin Lin	Instrument Chemist	Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 635377)									
EM0802745-075	4A/G40/0.25	EA002: pH Value	----	0.1	pH Unit	7.7	7.8	1.3	0% - 20%
EA002 : pH (Soils) (QC Lot: 635488)									
EM0802605-003	Anonymous	EA002: pH Value	----	0.1	pH Unit	9.4	9.3	1.1	0% - 20%
EM0802745-026	4A/G9/0.5	EA002: pH Value	----	0.1	pH Unit	9.7	9.8	1.0	0% - 20%
EA002 : pH (Soils) (QC Lot: 635490)									
EM0802745-071	4A/G23/1.0	EA002: pH Value	----	0.1	pH Unit	9.6	9.6	0.0	0% - 20%
EA002 : pH (Soils) (QC Lot: 639749)									
EM0802745-154	4A/C1	EA002: pH Value	----	0.1	pH Unit	8.1	8.1	0.0	0% - 20%
EM0802745-196	4A/C43	EA002: pH Value	----	0.1	pH Unit	7.8	7.8	0.0	0% - 20%
EA055: Moisture Content (QC Lot: 639553)									
EB0804980-006	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.4	15.9	8.8	0% - 50%
EA055: Moisture Content (QC Lot: 639660)									
EM0802745-011	4A/G4/0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	9.0	9.4	4.4	No Limit
EM0802745-032	4A/G11/0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	5.3	6.1	13.2	No Limit
EA055: Moisture Content (QC Lot: 639661)									
EM0802745-076	4A/G40/0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	8.0	7.8	1.5	No Limit
EM0802745-107	4A/G50/0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	9.3	9.8	5.6	No Limit
EA055: Moisture Content (QC Lot: 639662)									
EM0802745-161	4A/C8	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	6.3	5.7	9.0	No Limit
EM0802745-169	4A/C16	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	6.0	4.4	30.7	No Limit
EA055: Moisture Content (QC Lot: 639663)									
EM0802745-182	4A/C29	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.6	7.5	1.5	No Limit
EM0802745-190	4A/C37	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	6.4	6.4	0.0	No Limit
EA055: Moisture Content (QC Lot: 640723)									
EM0802745-205	4A/G26/0.25	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.0	5.8	17.8	No Limit
EM0802895-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	<1.0	<1.0	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 638892)									
EM0802745-001	4A/G1/0.25	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	100	100	0.0	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	25	27	6.0	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	9	10	14.2	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	20	22	6.7	0% - 50%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	6	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 638892) - continued									
EM0802745-001	4A/G1/0.25	EG005T: Copper	7440-50-8	5	mg/kg	16	16	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	180	185	3.0	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	32	34	5.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	27	28	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EM0802745-031	4A/G11/0.25	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	140	140	0.0	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	33	32	0.0	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	13	12	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	32	31	0.0	0% - 50%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	23	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	12	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	316	299	5.5	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	36	37	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	43	42	2.6	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 638894)									
EM0802745-075	4A/G40/0.25	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	60	70	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	15	10.8	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	6	6	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	20	22	0.0	0% - 50%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	11	11	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	6	5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	160	146	8.9	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	22	22	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	19	19	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 638894) - continued									
EM0802745-124	4A/G59/0.25	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	20	20	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	34	28	17.4	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	6	5	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	19	16.6	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	10	17.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	8	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	90	84	6.4	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	36	33	10.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	26	26	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 638902)									
EM0802745-256	4A/QS-3	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	30	30	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	30	29	3.8	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	7	6	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	21	20	0.0	0% - 50%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	11	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	7	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	109	103	6.0	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	33	31	4.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	27	26	4.7	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EM0802870-009	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	40	40	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	22	20	6.8	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	9	8	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	8	8	0.0	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 638902) - continued									
EM0802870-009	Anonymous	EG005T: Copper	7440-50-8	5	mg/kg	13	13	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	18	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	444	394	12.0	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	28	26	6.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	18	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 639451)									
EM0802745-201	4A/C48	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	170	110	40.4	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	32	32	0.0	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	14	13	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	33	32	0.0	0% - 50%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	17	17	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	275	275	0.0	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	36	35	2.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	36	36	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EM0802910-004	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	21	21	0.0	0% - 50%
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	40	46	12.3	0% - 20%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	9	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	12	21.9	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	52	49	5.2	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 640221)									
EM0802745-154	4A/C1	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	80	90	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	39	40	0.0	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 640221) - continued									
EM0802745-154	4A/C1	EG005T: Cobalt	7440-48-4	2	mg/kg	16	12	27.8	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	29	29	0.0	0% - 50%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	18	18	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	14	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	332	271	# 20.2	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	42	43	2.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	42	40	4.8	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EM0802745-164	4A/C11	EG005T: Beryllium	7440-41-7	1	mg/kg	1	1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	320	310	0.0	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	42	41	0.0	0% - 20%
		EG005T: Cobalt	7440-48-4	2	mg/kg	13	12	11.6	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	19	12.9	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	15	13	17.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	9	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	264	240	9.7	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	60	48	21.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	15	19.8	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	70	60	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 640223)									
EM0802745-178	4A/C25	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	80	70	13.3	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	35	35	0.0	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	12	12	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	28	28	0.0	0% - 50%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	18	18	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	15	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	365	336	8.5	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 640223) - continued									
EM0802745-178	4A/C25	EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	39	38	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	43	43	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EM0802745-188	4A/C35	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	80	80	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	35	31	11.3	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	11	11	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	25	24	4.8	0% - 50%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	15	8.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	12	14.9	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	264	282	6.3	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	37	36	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	37	34	7.8	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG035T: Total Mercury by FIMS (QC Lot: 638893)									
EM0802745-001	4A/G1/0.25	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0802745-031	4A/G11/0.25	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Mercury by FIMS (QC Lot: 638895)									
EM0802745-075	4A/G40/0.25	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0802745-124	4A/G59/0.25	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Mercury by FIMS (QC Lot: 638903)									
EM0802745-256	4A/QS-3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0802870-009	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Mercury by FIMS (QC Lot: 639453)									
EM0802745-201	4A/C48	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0802910-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Mercury by FIMS (QC Lot: 640222)									
EM0802745-154	4A/C1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0802745-164	4A/C11	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Mercury by FIMS (QC Lot: 640224)									
EM0802745-178	4A/C25	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0802745-188	4A/C35	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 639046)									
EM0802745-019	4A/G7/0.25	EG048: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM0802878-001	Anonymous	EG048: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EK026G: Total Cyanide By Discrete Analyser (QC Lot: 639763)									
EM0802745-019	4A/G7/0.25	EK026G: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EM0802897-005	Anonymous	EK026G: Total Cyanide	57-12-5	1	mg/kg	3	3	0.0	No Limit
EK040T: Fluoride Total (QC Lot: 638555)									
EM0802805-001	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	400	410	3.7	0% - 50%
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 640892)									
EM0802745-019	4A/G7/0.25	EP066-EM: Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EM0802878-002	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 639275)									
EM0802745-106	4A/G50/0.25	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802869-007	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 639275) - continued									
EM0802869-007	Anonymous	EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 639872)									
EM0802745-001	4A/G1/0.25	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802745-032	4A/G11/0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 639872) - continued									
EM0802745-032	4A/G11/0.5	EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 639873)									
EM0802745-071	4A/G23/1.0	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802745-167	4A/C14	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 639873) - continued									
EM0802745-167	4A/C14	EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 639876)									
EM0802745-226	4A/G33/0.25	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802862-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 639876) - continued									
EM0802862-001	Anonymous	EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 639275)									
EM0802745-106	4A/G50/0.25	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802869-007	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 639872)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 639872) - continued									
EM0802745-001	4A/G1/0.25	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802745-032	4A/G11/0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 639873)									
EM0802745-071	4A/G23/1.0	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 639873) - continued									
EM0802745-071	4A/G23/1.0	EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802745-167	4A/C14	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 639876)									
EM0802745-226	4A/G33/0.25	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 639876) - continued									
EM0802745-226	4A/G33/0.25	EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802862-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 638946)									
EM0802745-019	4A/G7/0.25	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM0802910-004	Anonymous	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 638946)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074I: Volatile Halogenated Compounds (QC Lot: 638946) - continued									
EM0802745-019	4A/G7/0.25	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.0	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.0	No Limit
EM0802910-004	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.0	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 639274)									
EM0802745-106	4A/G50/0.25	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 639274) - continued									
EM0802745-106	4A/G50/0.25	EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM0802745-188	4A/C35	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 639852)									
EM0802745-001	4A/G1/0.25	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 639852) - continued									
EM0802745-031	4A/G11/0.25	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 640460)									
EM0802745-069	4A/G23/0.25	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM0802745-124	4A/G59/0.25	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 640460) - continued									
EM0802745-124	4A/G59/0.25	EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 640660)									
EM0802745-172	4A/C19	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM0802745-256	4A/QS-3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 640891)									
EM0802745-019	4A/G7/0.25	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 4-Chloro-3-Methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 640891) - continued									
EM0802745-019	4A/G7/0.25	EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0802878-002	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 4-Chloro-3-Methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 640891)									
EM0802745-019	4A/G7/0.25	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.0	No Limit
EM0802878-002	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.0	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 640891)									
EM0802745-019	4A/G7/0.25	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 640891) - continued									
EM0802745-019	4A/G7/0.25	EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM0802878-002	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 640891)									
EM0802745-019	4A/G7/0.25	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075I: Organochlorine Pesticides (QC Lot: 640891) - continued									
EM0802745-019	4A/G7/0.25	EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EM0802878-002	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 638921)									
EM0802745-001	4A/G1/0.25	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM0802854-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 638923)									
EM0802745-069	4A/G23/0.25	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM0802745-107	4A/G50/0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 638924)									
EM0802873-020	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM0802873-006	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 638946)									
EM0802745-019	4A/G7/0.25	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM0802910-004	Anonymous	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 639273)									
EM0802745-106	4A/G50/0.25	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 639851)									
EM0802745-001	4A/G1/0.25	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM0802745-031	4A/G11/0.25	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 639851) - continued									
EM0802745-031	4A/G11/0.25	EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 640459)									
EM0802745-069	4A/G23/0.25	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM0802745-124	4A/G59/0.25	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 640661)									
EM0802745-256	4A/QS-3	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 639545)									
EM0802745-148	4A/TB-2	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.010	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EM0802933-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 639545) - continued									
EM0802933-001	Anonymous	EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.010	mg/L	<0.010	<0.010	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 641323)									
EM0802745-148	4A/TB-2	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM0802867-006	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 638892)								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	102	84.4	124
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	108	93.3	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	97.5	90.2	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	93.4	89.2	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	104	90.6	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	96.1	88.4	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	99.7	89	117
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Silver	7440-22-4	2	mg/kg	<2	5.23 mg/kg	100	75.7	126
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	99.2	83.9	116
EG005T: Total Metals by ICP-AES (QCLot: 638894)								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	100	84.4	124
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	106	93.3	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	97.1	90.2	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	97.5	89.2	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	101	90.6	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	94.6	88.4	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	99.6	89	117
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	104	83.9	116
EG005T: Total Metals by ICP-AES (QCLot: 638902)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 638902) - continued								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	98.4	84.4	124
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	98.4	93.3	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	94.3	90.2	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	98.8	89.2	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	106	90.6	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	102	88.4	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	94.4	89	117
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	96.0	83.9	116
EG005T: Total Metals by ICP-AES (QCLot: 640221)								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	103	84.4	124
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	107	93.3	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	103	90.2	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	102	89.2	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	106	90.6	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	103	88.4	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	102	89	117
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	96.9	83.9	116
EG005T: Total Metals by ICP-AES (QCLot: 640223)								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	101	84.4	124
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	108	93.3	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	104	90.2	122

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 640223) - continued								
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	102	89.2	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	107	90.6	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	103	88.4	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	102	89	117
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	97.2	83.9	116
EG035T: Total Mercury by FIMS (QCLot: 638893)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	85.5	71.9	119
EG035T: Total Mercury by FIMS (QCLot: 638895)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	89.5	71.9	119
EG035T: Total Mercury by FIMS (QCLot: 638903)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	91.7	71.9	119
EG035T: Total Mercury by FIMS (QCLot: 639453)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	87.3	71.9	119
EG035T: Total Mercury by FIMS (QCLot: 640222)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	102	71.9	119
EG035T: Total Mercury by FIMS (QCLot: 640224)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	97.2	71.9	119
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 639046)								
EG048: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	20 mg/kg	94.1	80	120
EK026G: Total Cyanide By Discrete Analyser (QCLot: 639763)								
EK026G: Total Cyanide	57-12-5	1	mg/kg	<1	50 mg/kg	98.0	80	120
EK040T: Fluoride Total (QCLot: 638555)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	110 mg/kg	122	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 640892)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	----	0.5 mg/kg	85.7	67	123
		0.10	mg/kg	<0.10	----	----	----	----
EP068A: Organochlorine Pesticides (OC) (QCLot: 639275)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	95.7	51.8	123
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	92.5	48.6	124
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	99.3	59.8	124
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	97.0	54.7	124
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	91.8	58.3	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	91.0	50.6	122

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 639275) - continued								
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	91.6	56.4	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	102	59	121
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	92.3	59.3	122
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	93.5	59	126
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	91.9	59.7	122
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	95.4	57	119
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	92.4	60.4	121
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	92.4	58	126
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	91.5	62	125
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	90.8	56.7	126
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	85.6	58.2	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	92.6	59.6	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	96.7	52	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	93.9	57.9	125
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	109	45.6	132
EP068A: Organochlorine Pesticides (OC) (QCLot: 639872)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	97.4	51.8	123
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	96.2	48.6	124
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	101	59.8	124
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	98.2	54.7	124
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	100	58.3	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	94.4	50.6	122
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	95.0	56.4	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	96.5	59	121
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	96.7	59.3	122
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	96.4	59	126
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	96.6	59.7	122
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	95.9	57	119
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	96.7	60.4	121
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	97.0	58	126
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	105	62	125
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	96.9	56.7	126
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	91.9	58.2	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	100	59.6	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	96.6	52	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	97.4	57.9	125
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	103	45.6	132
EP068A: Organochlorine Pesticides (OC) (QCLot: 639873)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	79.1	51.8	123
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	78.1	48.6	124
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	81.4	59.8	124
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	80.0	54.7	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 639873) - continued								
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	80.6	58.3	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	78.6	50.6	122
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	78.6	56.4	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	79.8	59	121
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	79.7	59.3	122
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	84.1	59	126
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	79.4	59.7	122
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	78.4	57	119
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	80.5	60.4	121
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	80.3	58	126
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	92.4	62	125
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	79.9	56.7	126
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	76.2	58.2	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	80.6	59.6	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	79.8	52	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	80.3	57.9	125
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	82.6	45.6	132
EP068A: Organochlorine Pesticides (OC) (QCLot: 639876)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	83.1	51.8	123
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	80.1	48.6	124
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	85.8	59.8	124
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	83.3	54.7	124
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	82.8	58.3	122
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	81.6	50.6	122
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	79.1	56.4	122
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	82.4	59	121
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	79.8	59.3	122
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	75.3	59	126
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	80.4	59.7	122
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	82.8	57	119
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	98.2	60.4	121
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	81.1	58	126
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	84.2	62	125
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	99.4	56.7	126
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	75.0	58.2	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	86.3	59.6	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	102	52	127
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	83.1	57.9	125
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	92.7	45.6	132
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639275)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	95.2	42.2	131
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	93.0	45.9	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639275) - continued								
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	118	17.6	167
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	102	56.8	129
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	90.8	56.6	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	94.6	59.4	119
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	106	55.9	127
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	95.7	58.6	131
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	92.2	59.4	120
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	93.1	60.4	120
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	95.2	53.8	130
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	92.4	57.7	122
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.25 mg/kg	95.2	56.1	133
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	92.1	59.4	122
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	95.0	55.8	130
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	93.5	59.4	121
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	95.2	58.7	126
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	92.8	56.7	124
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	110	45.6	136
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639872)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	94.9	42.2	131
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	70.8	45.9	129
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	105	17.6	167
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	102	56.8	129
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	96.6	56.6	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	97.0	59.4	119
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	98.4	55.9	127
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	99.5	58.6	131
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	95.9	59.4	120
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	97.0	60.4	120
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	96.5	53.8	130
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	96.1	57.7	122
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.25 mg/kg	98.4	56.1	133
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	97.3	59.4	122
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	93.2	55.8	130
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	96.7	59.4	121
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	98.7	58.7	126
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	97.2	56.7	124
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	110	45.6	136
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639873)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	73.3	42.2	131
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	64.5	45.9	129
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	78.4	17.6	167
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	80.5	56.8	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639873) - continued								
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	80.0	56.6	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	80.4	59.4	119
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	79.1	55.9	127
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	80.3	58.6	131
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	79.2	59.4	120
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	80.4	60.4	120
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	78.6	53.8	130
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	79.3	57.7	122
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.25 mg/kg	79.0	56.1	133
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	80.6	59.4	122
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	77.9	55.8	130
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	79.8	59.4	121
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	81.5	58.7	126
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	79.7	56.7	124
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	75.9	45.6	136
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639876)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.25 mg/kg	82.6	42.2	131
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	91.2	45.9	129
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.25 mg/kg	111	17.6	167
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.25 mg/kg	87.3	56.8	129
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.25 mg/kg	79.0	56.6	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.25 mg/kg	81.8	59.4	119
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.25 mg/kg	75.3	55.9	127
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.25 mg/kg	88.5	58.6	131
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.25 mg/kg	77.5	59.4	120
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.25 mg/kg	79.8	60.4	120
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.25 mg/kg	73.8	53.8	130
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.25 mg/kg	78.9	57.7	122
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.25 mg/kg	82.2	56.1	133
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.25 mg/kg	81.0	59.4	122
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.25 mg/kg	66.6	55.8	130
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.25 mg/kg	80.8	59.4	121
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.25 mg/kg	81.4	58.7	126
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.25 mg/kg	80.0	56.7	124
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.25 mg/kg	97.5	45.6	136
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 638946)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	95.1	80.0	120
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	89.6	80.0	120
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	89.9	80.0	120
EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4.2 mg/kg	93.5	80.0	120
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	0.1 mg/kg	87.1	76.0	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 638946) - continued								
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	90.3	80.0	120
EP074I: Volatile Halogenated Compounds (QCLot: 638946)								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	91.7	65.6	112
EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	92.6	70.8	122
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	93.2	75.3	131
EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	90.8	79.0	121
EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	93.1	80.0	122
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	90.8	70.4	115
EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	85.8	72.0	120
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	79.8	65.5	120
EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	98.0	71.6	128
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	93.3	75.7	124
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	91.4	80.0	120
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	81.2	70.0	130
EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	----	----	----
EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	91.5	75.7	126
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	100	68.4	118
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	89.3	79.7	124
EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	82.8	72.3	116
EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	86.8	80.0	120
EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	101	73.0	118
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 639274)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	10 mg/kg	90.6	75.4	116
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	10 mg/kg	93.0	76.4	116
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	10 mg/kg	94.2	76.5	117
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	10 mg/kg	92.7	77.7	116
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	10 mg/kg	93.4	78.3	115
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	10 mg/kg	95.4	79.1	115
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	10 mg/kg	92.8	78.8	116
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	10 mg/kg	92.5	77.8	117
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	10 mg/kg	93.2	77.3	116
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	10 mg/kg	92.9	78	116
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	10 mg/kg	93.2	70.9	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	10 mg/kg	98.4	67.8	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	10 mg/kg	94.3	73.6	115
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	10 mg/kg	115	75.1	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	10 mg/kg	117	75.1	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	10 mg/kg	116	73.6	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 639852)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	10 mg/kg	84.2	75.4	116
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	10 mg/kg	82.9	76.4	116

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 639852) - continued								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	10 mg/kg	84.0	76.5	117
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	10 mg/kg	82.8	77.7	116
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	10 mg/kg	84.6	78.3	115
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	10 mg/kg	84.0	79.1	115
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	10 mg/kg	84.0	78.8	116
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	10 mg/kg	85.6	77.8	117
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	10 mg/kg	86.0	77.3	116
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	10 mg/kg	83.2	78	116
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	10 mg/kg	84.0	70.9	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	10 mg/kg	88.5	67.8	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	10 mg/kg	85.4	73.6	115
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	10 mg/kg	113	75.1	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	10 mg/kg	112	75.1	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	10 mg/kg	113	73.6	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 640460)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	10 mg/kg	82.8	75.4	116
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	10 mg/kg	84.4	76.4	116
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	10 mg/kg	86.0	76.5	117
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	10 mg/kg	83.8	77.7	116
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	10 mg/kg	86.0	78.3	115
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	10 mg/kg	86.6	79.1	115
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	10 mg/kg	85.2	78.8	116
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	10 mg/kg	86.6	77.8	117
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	10 mg/kg	87.6	77.3	116
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	10 mg/kg	82.8	78	116
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	10 mg/kg	86.4	70.9	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	10 mg/kg	89.2	67.8	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	10 mg/kg	87.6	73.6	115
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	10 mg/kg	116	75.1	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	10 mg/kg	115	75.1	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	10 mg/kg	116	73.6	119
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 640660)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	10 mg/kg	82.8	75.4	116
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	10 mg/kg	84.5	76.4	116
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	10 mg/kg	86.0	76.5	117
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	10 mg/kg	83.7	77.7	116
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	10 mg/kg	85.9	78.3	115
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	10 mg/kg	86.6	79.1	115
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	10 mg/kg	85.3	78.8	116
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	10 mg/kg	86.7	77.8	117
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	10 mg/kg	87.6	77.3	116
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	10 mg/kg	82.8	78	116

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 640660) - continued								
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	10 mg/kg	86.5	70.9	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	10 mg/kg	89.2	67.8	123
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	10 mg/kg	87.6	73.6	115
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	10 mg/kg	116	75.1	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	10 mg/kg	115	75.1	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	10 mg/kg	116	73.6	119
EP075A: Phenolic Compounds (Halogenated) (QCLot: 640891)								
EP075-EM: 2-Chlorophenol	95-57-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	73.6	39	149
EP075-EM: 2.4-Dichlorophenol	120-83-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	54.6	20.9	147
EP075-EM: 2.6-Dichlorophenol	87-65-0	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	56.8	32.4	141
EP075-EM: 4-Chloro-3-Methylphenol	59-50-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	68.0	42.6	155
EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	64.8	41.1	145
EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	65.6	41.6	150
EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	78.1	29.3	116
EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	1 mg/kg	40.4	23.6	145
EP075-EM: Pentachlorophenol	87-86-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	56.3	30.7	134
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 640891)								
EP075-EM: Phenol	108-95-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	55.3	47	152
EP075-EM: 2-Methylphenol	95-48-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	# 43.5	52.1	128
EP075-EM: 3- & 4-Methylphenol	1319-77-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	1.0 mg/kg	46.5	31.9	176
EP075-EM: 2-Nitrophenol	88-75-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	44.6	25.6	145
EP075-EM: 2.4-Dimethylphenol	105-67-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	48.3	26	122
EP075-EM: 2.4-Dinitrophenol	51-28-5	2	mg/kg	<2	3 mg/kg	18.8	10.2	156
EP075-EM: 4-Nitrophenol	100-02-7	2	mg/kg	<2	3 mg/kg	85.0	44.4	172
EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	2	mg/kg	<2	3 mg/kg	48.2	17.3	136
EP075-EM: Dinoseb	88-85-7	2	mg/kg	<2	3 mg/kg	62.4	25	139
EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	2	mg/kg	<2	2.5 mg/kg	33.2	7.66	164
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 640891)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 640891) - continued								
EP075-EM: Naphthalene	91-20-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	81.7	45.2	129
EP075-EM: Acenaphthene	83-32-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	86.1	50.3	127
EP075-EM: Acenaphthylene	208-96-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	67.1	44.2	140
EP075-EM: Fluorene	86-73-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	85.7	52.2	131
EP075-EM: Phenanthrene	85-01-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	83.5	53.8	136
EP075-EM: Anthracene	120-12-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	86.2	49.1	136
EP075-EM: Fluoranthene	206-44-0	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	86.2	51.2	146
EP075-EM: Pyrene	129-00-0	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	91.6	54.8	142
EP075-EM: Benz(a)anthracene	56-55-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	88.3	50.4	145
EP075-EM: Chrysene	218-01-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	88.2	50.8	143
EP075-EM: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.05	mg/kg	<0.05	1.0 mg/kg	85.1	47.8	135
EP075-EM: Benzo(a)pyrene	50-32-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	81.6	50.2	125
EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	86.7	58.8	126
EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	87.4	55.5	135
EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	87.4	56.7	130
EP075I: Organochlorine Pesticides (QCLot: 640891)								
EP075-EM: alpha-BHC	319-84-6	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	91.9	54.8	131
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	85.9	24.4	155
EP075-EM: beta-BHC	319-85-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	89.7	47	153
EP075-EM: gamma-BHC	58-89-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	87.9	50.7	143
EP075-EM: delta-BHC	319-86-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	88.7	55	137
EP075-EM: Heptachlor	76-44-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	86.4	45.3	140

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075I: Organochlorine Pesticides (QCLot: 640891) - continued								
EP075-EM: Aldrin	309-00-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	87.5	50.9	139
EP075-EM: Heptachlor epoxide	1024-57-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	87.0	51.4	137
EP075-EM: cis-Chlordane	5103-71-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	87.0	38.8	150
EP075-EM: trans-Chlordane	5103-74-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	88.6	46.8	142
EP075-EM: Endosulfan 1	959-98-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	84.8	61.6	134
EP075-EM: 4.4`-DDE	72-55-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	77.3	52.2	136
EP075-EM: Dieldrin	60-57-1	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	89.1	55.2	140
EP075-EM: Endrin aldehyde	7421-93-4	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	110	22	150
EP075-EM: Endrin	72-20-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	90.4	50.2	141
EP075-EM: Endosulfan 2	33213-65-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	88.2	59.1	141
EP075-EM: 4.4`-DDD	72-54-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	89.1	45.4	153
EP075-EM: Endosulfan sulfate	1031-07-8	0.02	mg/kg	<0.02	----	----	----	----
EP075-EM: 4.4`-DDT	50-29-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	88.8	46.1	141
EP075-EM: Methoxychlor	72-43-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	90.9	43.1	144
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638921)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	32 mg/kg	116	81	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638923)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	32 mg/kg	107	81	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638924)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	32 mg/kg	107	81	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638946)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	33.1 mg/kg	97.2	73.2	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 639273)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	606 mg/kg	72.7	69	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	1460 mg/kg	101	69	127
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	342 mg/kg	102	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 639851)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	606 mg/kg	74.2	69	123

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 639851) - continued								
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	1460 mg/kg	102	69	127
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	342 mg/kg	97.3	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 640459)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	606 mg/kg	75.0	69	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	1460 mg/kg	106	69	127
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	342 mg/kg	106	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 640661)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	606 mg/kg	80.2	69	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	1460 mg/kg	92.0	69	127
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	342 mg/kg	98.2	70	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 639545)								
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	102	91.7	118
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.5	88.4	108
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	101	78.9	119
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	97.0	88.9	106
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	89.6	112
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.3	87.6	110
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.8	86.9	109
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.7	87.7	106
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	90	112
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	100	88.2	107
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	97.6	90.1	106
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.1	85.8	109
EG020A-F: Selenium	7782-49-2	0.01	mg/L	----	0.1 mg/L	107	85.4	112
		0.010	mg/L	<0.010	----	----	----	----
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	108	87.2	119
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	98.8	90.4	107
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.8	89	110
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	98.4	80	120
EG035F: Dissolved Mercury by FIMS (QCLot: 641323)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	102	80.2	120
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 638569)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	----	5 µg/L	83.3	50	131
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	----	5 µg/L	81.3	49.3	121
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	----	5 µg/L	80.8	56.8	129
		1.0	µg/L	<1.0	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 638569) - continued								
EP075(SIM): Fluorene	86-73-7	1	µg/L	----	5 µg/L	82.1	58.4	127
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	----	5 µg/L	83.8	62.2	131
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Anthracene	120-12-7	1	µg/L	----	5 µg/L	83.8	61.1	128
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	----	5 µg/L	83.3	61.2	132
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Pyrene	129-00-0	1	µg/L	----	5 µg/L	84.6	64	133
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	----	5 µg/L	85.8	64.3	138
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Chrysene	218-01-9	1	µg/L	----	5 µg/L	83.4	60.2	133
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(b)fluoranthene	205-99-2	1	µg/L	----	5 µg/L	97.8	61.6	142
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	----	5 µg/L	82.7	55.1	133
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	----	5 µg/L	87.1	57.7	133
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	----	5 µg/L	118	64.2	135
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	----	5 µg/L	117	63.2	136
		1.0	µg/L	<1.0	----	----	----	----
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	----	5 µg/L	118	64.3	136
		1.0	µg/L	<1.0	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638568)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	399 µg/L	83.4	64	124
EP071: C15 - C28 Fraction	----	100	µg/L	<100	402 µg/L	96.5	70	130
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	97.5	68	128

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries . Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 638892)							
EM0802745-002	4A/G1/0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	89.7	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	83.1	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	101	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.6	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	91.6	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	104	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	95.2	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	96.6	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	87.4	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	82.2	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	94.0	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	86.4	70	130
EG005T: Total Metals by ICP-AES (QCLot: 638894)							
EM0802745-076	4A/G40/0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	85.7	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	125	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	99.3	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.1	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	89.0	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	101	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	93.4	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	93.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	89.1	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	75.0	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	92.6	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	85.0	70	130
EG005T: Total Metals by ICP-AES (QCLot: 638902)							
EM0802870-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	88.7	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	105	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	110	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.4	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	94.7	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	111	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	101	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	71.7	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.5	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 638902) - continued							
EM0802870-001	Anonymous	EG005T: Selenium	7782-49-2	50 mg/kg	91.0	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	98.8	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	97.0	70	130
EG005T: Total Metals by ICP-AES (QCLot: 640221)							
EM0802745-155	4A/C2	EG005T: Arsenic	7440-38-2	50 mg/kg	83.7	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	# 158	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	104	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.0	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	90.6	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	98.5	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	94.7	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	# 63.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.2	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	75.6	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	92.3	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	85.5	70	130
EG005T: Total Metals by ICP-AES (QCLot: 640223)							
EM0802745-179	4A/C26	EG005T: Arsenic	7440-38-2	50 mg/kg	97.4	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	124	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	114	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	103	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	105	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	106	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	75.3	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	103	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	92.2	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	106	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	# 150	70	130
EG035T: Total Mercury by FIMS (QCLot: 638893)							
EM0802745-002	4A/G1/0.5	EG035T: Mercury	7439-97-6	5.0 mg/kg	100	70	130
EG035T: Total Mercury by FIMS (QCLot: 638895)							
EM0802745-076	4A/G40/0.5	EG035T: Mercury	7439-97-6	5.0 mg/kg	104	70	130
EG035T: Total Mercury by FIMS (QCLot: 638903)							
EM0802870-001	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	99.3	70	130
EG035T: Total Mercury by FIMS (QCLot: 639453)							
EM0802897-001	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	103	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Mercury by FIMS (QCLot: 640222)							
EM0802745-155	4A/C2	EG035T: Mercury	7439-97-6	5.0 mg/kg	93.4	70	130
EG035T: Total Mercury by FIMS (QCLot: 640224)							
EM0802745-179	4A/C26	EG035T: Mercury	7439-97-6	5.0 mg/kg	92.0	70	130
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 639046)							
EM0802745-040	4A/G14/0.1	EG048: Hexavalent Chromium	18540-29-9	1140 mg/kg	99.5	70	130
EK026G: Total Cyanide By Discrete Analyser (QCLot: 639763)							
EM0802745-040	4A/G14/0.1	EK026G: Total Cyanide	57-12-5	100 mg/kg	97.4	70	130
EK040T: Fluoride Total (QCLot: 638555)							
EM0802805-001	Anonymous	EK040T: Fluoride	16984-48-8	500 mg/kg	93.6	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 640892)							
EM0802870-019	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.5 mg/kg	99.6	67	123
EP068A: Organochlorine Pesticides (OC) (QCLot: 639275)							
EM0802745-107	4A/G50/0.5	EP068: gamma-BHC	58-89-9	0.25 mg/kg	87.4	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	78.9	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	81.6	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	84.4	70	130
		EP068: Endrin	72-20-8	0.25 mg/kg	84.2	70	130
		EP068: 4.4`-DDT	50-29-3	0.25 mg/kg	81.8	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 639872)							
EM0802745-002	4A/G1/0.5	EP068: gamma-BHC	58-89-9	0.25 mg/kg	85.3	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	81.4	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	71.6	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	83.3	70	130
		EP068: Endrin	72-20-8	0.25 mg/kg	88.2	70	130
		EP068: 4.4`-DDT	50-29-3	0.25 mg/kg	# 66.8	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 639873)							
EM0802745-075	4A/G40/0.25	EP068: gamma-BHC	58-89-9	0.25 mg/kg	79.8	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	78.9	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	# 68.0	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	79.7	70	130
		EP068: Endrin	72-20-8	0.25 mg/kg	83.8	70	130
		EP068: 4.4`-DDT	50-29-3	0.25 mg/kg	72.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 639876)							
EM0802745-227	4A/G33/0.5	EP068: gamma-BHC	58-89-9	0.25 mg/kg	75.8	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	# 56.1	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	80.2	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	83.0	70	130
		EP068: Endrin	72-20-8	0.25 mg/kg	# 65.4	70	130
		EP068: 4.4`-DDT	50-29-3	0.25 mg/kg	107	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639275)							
EM0802745-107	4A/G50/0.5	EP068: Diazinon	333-41-5	0.25 mg/kg	104	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	91.2	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	91.1	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.29 mg/kg	99.1	70	130
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	81.3	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639872)							
EM0802745-002	4A/G1/0.5	EP068: Diazinon	333-41-5	0.25 mg/kg	97.5	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	83.5	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	90.1	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.29 mg/kg	95.9	70	130
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	81.8	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639873)							
EM0802745-075	4A/G40/0.25	EP068: Diazinon	333-41-5	0.25 mg/kg	92.2	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	79.8	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	86.8	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.29 mg/kg	92.2	70	130
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	79.5	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 639876)							
EM0802745-227	4A/G33/0.5	EP068: Diazinon	333-41-5	0.25 mg/kg	100	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.25 mg/kg	85.8	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.25 mg/kg	83.8	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.29 mg/kg	97.6	70	130
		EP068: Prothiofos	34643-46-4	0.25 mg/kg	82.8	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 638946)							
EM0802745-040	4A/G14/0.1	EP074-UT: Benzene	71-43-2	2 mg/kg	82.0	70	130
		EP074-UT: Toluene	108-88-3	2 mg/kg	82.4	70	130
EP074I: Volatile Halogenated Compounds (QCLot: 638946)							
EM0802745-040	4A/G14/0.1	EP074-UT: 1.1-Dichloroethene	75-35-4	2 mg/kg	87.3	70	130
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	93.1	70	130
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	91.4	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 639274)							
EM0802745-108	4A/G50/1.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	88.2	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	94.3	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 639852)							
EM0802745-003	4A/G1/1.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	79.6	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	83.1	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 640460)							
EM0802745-071	4A/G23/1.0	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	80.3	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	83.3	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 640660)							
EM0802745-176	4A/C23	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	70.9	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	71.8	70	130
EP075A: Phenolic Compounds (Halogenated) (QCLot: 640891)							
EM0802745-040	4A/G14/0.1	EP075-EM: 2-Chlorophenol	95-57-8	1.25 mg/kg	# 63.7	70	130
		EP075-EM: 4-Chloro-3-Methylphenol	59-50-7	1.25 mg/kg	71.1	70	130
		EP075-EM: Pentachlorophenol	87-86-5	1.25 mg/kg	# 49.8	70	130
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 640891)							
EM0802745-040	4A/G14/0.1	EP075-EM: Phenol	108-95-2	1.25 mg/kg	# 53.8	70	130
		EP075-EM: 2-Nitrophenol	88-75-5	1.25 mg/kg	# 52.2	70	130
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 640891)							
EM0802745-040	4A/G14/0.1	EP075-EM: Acenaphthene	83-32-9	1.25 mg/kg	# 67.6	70	130
		EP075-EM: Pyrene	129-00-0	1.25 mg/kg	70.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638921)							
EM0802854-002	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	85.8	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638923)							
EM0802745-070	4A/G23/0.5	EP080: C6 - C9 Fraction	----	28 mg/kg	87.4	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638924)							
EM0802873-002	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	65.9	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 638946)							
EM0802745-040	4A/G14/0.1	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	71.6	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 639273)							
EM0802745-107	4A/G50/0.5	EP071: C10 - C14 Fraction	----	606 mg/kg	72.3	60	130
		EP071: C15 - C28 Fraction	----	1460 mg/kg	98.3	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	97.0	60	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 639851)							
EM0802745-002	4A/G1/0.5	EP071: C10 - C14 Fraction	----	606 mg/kg	69.7	60	130
		EP071: C15 - C28 Fraction	----	1460 mg/kg	98.3	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	98.0	60	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 640459)							
EM0802745-070	4A/G23/0.5	EP071: C10 - C14 Fraction	----	606 mg/kg	73.0	60	130
		EP071: C15 - C28 Fraction	----	1460 mg/kg	101	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	97.8	60	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 640661)							
EM0802745-206	4A/G26/0.5	EP071: C10 - C14 Fraction	----	606 mg/kg	65.0	60	130
		EP071: C15 - C28 Fraction	----	1460 mg/kg	91.8	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	77.3	60	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 639545)							
EM0802745-148	4A/TB-2	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	102	70	130
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	108	70	130
		EG020A-F: Barium	7440-39-3	0.2 mg/L	106	70	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	108	70	130
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	103	70	130
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	102	70	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	101	70	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	95.7	70	130
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	104	70	130
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	101	70	130
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	103	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	108	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 641323)							
EM0802745-149	4A/RB-2	EG035F: Mercury	7439-97-6	0.0100 mg/L	97.9	70	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **EM0802745**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: RESULTS/INVOICE	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: vicreception@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4	Page	: 1 of 11
Order number	: 21189		
C-O-C number	: ----	Quote number	: ES2008OTEK0064 (EN/018/08)
Site	: ----		
Sampler	: EB	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 17-APR-2008	Issue Date	: 18-APR-2008 17:54
Client Requested Due Date	: 21-APR-2008	Scheduled Reporting Date	: **29-APR-2008**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 5.9 - 7.3 C - Ice present
No. of coolers/boxes	: ----	No. of samples received	: 261
Sercurity Seal	: Intact.	No. of samples analysed	: 102

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- **Sample containers do not comply to pretreatment / preservation standards (AS, APHA, USEPA). Please refer to the Sample Container(s)/Preservation Non-Compliance Log at the end of this report for details.**
- **Sample(s) have been received within recommended holding times**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method / Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
EG020A-F : Dissolved Metals by ICP-MS - Suite A		
4A/TB-2	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered
4A/RB-2	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered
4A/RB7	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered
4A/RB5	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered
EG035F : Dissolved Mercury by FIMS		
4A/TB-2	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered
4A/RB-2	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered
4A/RB7	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered
4A/RB5	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-16 EPA 448.3 Comprehensive	SOIL - S-03A 17 Metals (incl. Digestion)
EM0802745-001	10-APR-2008 15:00	4A/G1/0.25		✓			✓	✓		✓
EM0802745-002	10-APR-2008 15:00	4A/G1/0.5		✓			✓	✓		✓
EM0802745-003	10-APR-2008 15:00	4A/G1/1.0					✓	✓		✓
EM0802745-004	10-APR-2008 15:00	4A/G2/0.25	✓							
EM0802745-005	10-APR-2008 15:00	4A/G2/0.5	✓							
EM0802745-006	10-APR-2008 15:00	4A/G2/1.0	✓							
EM0802745-007	10-APR-2008 15:00	4A/G3/0.25	✓							
EM0802745-008	10-APR-2008 15:00	4A/G3/0.5	✓							
EM0802745-009	10-APR-2008 15:00	4A/G3/1.0	✓							
EM0802745-010	10-APR-2008 15:00	4A/G4/0.25		✓		✓	✓	✓		✓
EM0802745-011	10-APR-2008 15:00	4A/G4/0.5		✓		✓	✓	✓		✓
EM0802745-012	10-APR-2008 15:00	4A/G4/1.0		✓			✓	✓		
EM0802745-013	11-APR-2008 15:00	4A/G5/0.25	✓							
EM0802745-014	11-APR-2008 15:00	4A/G5/0.5	✓							
EM0802745-015	11-APR-2008 15:00	4A/G5/1.0	✓							
EM0802745-016	08-APR-2008 15:00	4A/G6/0.25	✓							
EM0802745-017	08-APR-2008 15:00	4A/G6/0.5	✓							
EM0802745-018	08-APR-2008 15:00	4A/G6/1.0	✓							
EM0802745-019	09-APR-2008 15:00	4A/G7/0.25							✓	
EM0802745-020	09-APR-2008 15:00	4A/G7/0.5	✓							
EM0802745-021	09-APR-2008 15:00	4A/G7/1.0	✓							

			(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-16 EPA 448.3 Comprehensive	SOIL - S-03A 17 Metals (incl. Digestion)
EM0802745-022	09-APR-2008 15:00	4A/G8/0.25	✓							
EM0802745-023	09-APR-2008 15:00	4A/G8/0.5	✓							
EM0802745-024	09-APR-2008 15:00	4A/G8/1.0	✓							
EM0802745-025	09-APR-2008 15:00	4A/G9/0.25		✓		✓	✓	✓		✓
EM0802745-026	09-APR-2008 15:00	4H/G9/0.5		✓		✓	✓	✓		✓
EM0802745-027	09-APR-2008 15:00	4H/G9/1.0				✓	✓	✓		✓
EM0802745-028	09-APR-2008 15:00	4A/G10/0.25	✓							
EM0802745-029	09-APR-2008 15:00	4A/G10/0.5	✓							
EM0802745-030	09-APR-2008 15:00	4A/G10/1.0	✓							
EM0802745-031	09-APR-2008 15:00	4A/G11/0.25		✓				✓		✓
EM0802745-032	09-APR-2008 15:00	4A/G11/0.5		✓		✓		✓		✓
EM0802745-033	09-APR-2008 15:00	4A/G11/1.0				✓		✓		✓
EM0802745-034	09-APR-2008 15:00	4A/G12/0.25	✓							
EM0802745-035	09-APR-2008 15:00	4A/G12/0.5	✓							
EM0802745-036	09-APR-2008 15:00	4A/G12/1.0	✓							
EM0802745-037	09-APR-2008 15:00	4A/G13/0.25	✓							
EM0802745-038	09-APR-2008 15:00	4A/G13/0.5	✓							
EM0802745-039	09-APR-2008 15:00	4A/G13/1.0	✓							
EM0802745-040	10-APR-2008 15:00	4A/G14/0.1							✓	
EM0802745-041	10-APR-2008 15:00	4A/G14/0.25	✓							
EM0802745-042	10-APR-2008 15:00	4A/G14/0.5	✓							
EM0802745-043	10-APR-2008 15:00	4A/G14/1.0	✓							
EM0802745-044	10-APR-2008 15:00	4A/G14/0.1	✓							
EM0802745-045	10-APR-2008 15:00	4A/G15/0.25	✓							
EM0802745-046	10-APR-2008 15:00	4A/G15/0.5	✓							
EM0802745-047	10-APR-2008 15:00	4A/G15/1.0	✓							
EM0802745-048	10-APR-2008 15:00	4A/G16/0.25		✓		✓		✓		✓
EM0802745-049	10-APR-2008 15:00	4A/G16/0.5		✓		✓		✓		✓
EM0802745-050	10-APR-2008 15:00	4A/G16/1.0		✓				✓		
EM0802745-051	10-APR-2008 15:00	4A/G17/0.25	✓							
EM0802745-052	10-APR-2008 15:00	4A/G17/0.5	✓							
EM0802745-053	10-APR-2008 15:00	4A/G17/1.0	✓							
EM0802745-054	10-APR-2008 15:00	4A/G18/0.25	✓							
EM0802745-055	10-APR-2008 15:00	4A/G18/0.5	✓							
EM0802745-056	10-APR-2008 15:00	4A/G18/1.0	✓							
EM0802745-057	11-APR-2008 15:00	4A/G19/0.25	✓							
EM0802745-058	11-APR-2008 15:00	4A/G19/0.5	✓							
EM0802745-059	11-APR-2008 15:00	4A/G19/1.0	✓							
EM0802745-060	11-APR-2008 15:00	4A/G20/0.25	✓							
EM0802745-061	11-APR-2008 15:00	4A/G20/0.5	✓							
EM0802745-062	11-APR-2008 15:00	4A/G20/1.0	✓							

			(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-16 EPA 448.3 Comprehensive	SOIL - S-03A 17 Metals (incl. Digestion)
EM0802745-063	11-APR-2008 15:00	4A/G21/0.25		✓		✓		✓		✓
EM0802745-064	11-APR-2008 15:00	4A/G21/0.5		✓		✓		✓		✓
EM0802745-065	11-APR-2008 15:00	4A/G21/1.0				✓		✓		✓
EM0802745-066	11-APR-2008 15:00	4A/G22/0.25	✓							
EM0802745-067	11-APR-2008 15:00	4A/G22/0.5	✓							
EM0802745-068	11-APR-2008 15:00	4A/G22/1.0	✓							
EM0802745-069	11-APR-2008 15:00	4A/G23/0.25		✓		✓		✓		✓
EM0802745-070	11-APR-2008 15:00	4A/G23/0.5		✓		✓		✓		✓
EM0802745-071	11-APR-2008 15:00	4A/G23/1.0		✓				✓		
EM0802745-072	11-APR-2008 15:00	4A/G25/0.25	✓							
EM0802745-073	11-APR-2008 15:00	4A/G25/0.5	✓							
EM0802745-074	11-APR-2008 15:00	4A/G25/1.0	✓							
EM0802745-075	08-APR-2008 15:00	4A/G40/0.25		✓		✓		✓		✓
EM0802745-076	08-APR-2008 15:00	4A/G40/0.5		✓		✓		✓		✓
EM0802745-077	08-APR-2008 15:00	4A/G40/1.0				✓		✓		✓
EM0802745-078	08-APR-2008 15:00	4A/G40/0.1				✓		✓		✓
EM0802745-079	08-APR-2008 15:00	4A/G41/0.25	✓							
EM0802745-080	08-APR-2008 15:00	4A/G41/0.5	✓							
EM0802745-081	08-APR-2008 15:00	4A/G41/1.0	✓							
EM0802745-082	08-APR-2008 15:00	4A/G42/0.25	✓							
EM0802745-083	08-APR-2008 15:00	4A/G42/0.5	✓							
EM0802745-084	08-APR-2008 15:00	4A/G42/1.0	✓							
EM0802745-085	08-APR-2008 15:00	4A/G43/0.25	✓							
EM0802745-086	08-APR-2008 15:00	4A/G43/0.5	✓							
EM0802745-087	08-APR-2008 15:00	4A/G43/1.0	✓							
EM0802745-088	08-APR-2008 15:00	4A/G44/0.25	✓							
EM0802745-089	08-APR-2008 15:00	4A/G44/0.5	✓							
EM0802745-090	08-APR-2008 15:00	4A/G44/1.0	✓							
EM0802745-091	08-APR-2008 15:00	4A/G45/0.25	✓							
EM0802745-092	08-APR-2008 15:00	4A/G45/0.5	✓							
EM0802745-093	08-APR-2008 15:00	4A/G45/1.0	✓							
EM0802745-094	08-APR-2008 15:00	4A/G46/0.25	✓							
EM0802745-095	08-APR-2008 15:00	4A/G46/0.5	✓							
EM0802745-096	08-APR-2008 15:00	4A/G46/1.0	✓							
EM0802745-097	08-APR-2008 15:00	4A/G47/0.25	✓							
EM0802745-098	08-APR-2008 15:00	4A/G47/0.5	✓							
EM0802745-099	08-APR-2008 15:00	4A/G47/1.0	✓							
EM0802745-100	08-APR-2008 15:00	4A/G48/0.25	✓							
EM0802745-101	08-APR-2008 15:00	4A/G48/0.5	✓							
EM0802745-102	08-APR-2008 15:00	4A/G48/1.0	✓							
EM0802745-103	08-APR-2008 15:00	4A/G49/0.25		✓		✓		✓		✓

			(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-16 EPA 448.3 Comprehensive	SOIL - S-03A 17 Metals (incl. Digestion)
EM0802745-104	08-APR-2008 15:00	4A/G49/0.5		✓		✓		✓		✓
EM0802745-105	08-APR-2008 15:00	4A/G49/1.0						✓		
EM0802745-106	07-APR-2008 15:00	4A/G50/0.25		✓		✓		✓		✓
EM0802745-107	07-APR-2008 15:00	4A/G50/0.5		✓		✓		✓		✓
EM0802745-108	07-APR-2008 15:00	4A/G50/1.0		✓		✓		✓		✓
EM0802745-109	07-APR-2008 15:00	4A/G51/0.25	✓							
EM0802745-110	07-APR-2008 15:00	4A/G51/0.5	✓							
EM0802745-111	07-APR-2008 15:00	4A/G51/1.0	✓							
EM0802745-112	07-APR-2008 15:00	4A/G52/0.25	✓							
EM0802745-113	07-APR-2008 15:00	4A/G52/0.5	✓							
EM0802745-114	07-APR-2008 15:00	4A/G52/1.0	✓							
EM0802745-115	08-APR-2008 15:00	4A/G53/0.25	✓							
EM0802745-116	08-APR-2008 15:00	4A/G53/0.5	✓							
EM0802745-117	08-APR-2008 15:00	4A/G53/1.0	✓							
EM0802745-118	08-APR-2008 15:00	4A/G54/0.25	✓							
EM0802745-119	08-APR-2008 15:00	4A/G54/0.5	✓							
EM0802745-120	08-APR-2008 15:00	4A/G54/1.0	✓							
EM0802745-121	08-APR-2008 15:00	4A/G55/0.25	✓							
EM0802745-122	08-APR-2008 15:00	4A/G55/0.5	✓							
EM0802745-123	08-APR-2008 15:00	4A/G55/1.0	✓							
EM0802745-124	11-APR-2008 15:00	4A/G59/0.25		✓		✓		✓		✓
EM0802745-125	11-APR-2008 15:00	4A/G59/0.5		✓		✓		✓		✓
EM0802745-126	11-APR-2008 15:00	4A/G59/1.0		✓		✓		✓		✓
EM0802745-127	11-APR-2008 15:00	4A/G60/0.25	✓							
EM0802745-128	11-APR-2008 15:00	4A/G60/0.5	✓							
EM0802745-129	11-APR-2008 15:00	4A/G60/1.0	✓							
EM0802745-130	11-APR-2008 15:00	4A/G61/0.25	✓							
EM0802745-131	11-APR-2008 15:00	4A/G61/0.5	✓							
EM0802745-132	11-APR-2008 15:00	4A/G61/1.0	✓							
EM0802745-133	11-APR-2008 15:00	4A/G62/0.25	✓							
EM0802745-134	11-APR-2008 15:00	4A/G62/0.5	✓							
EM0802745-135	11-APR-2008 15:00	4A/G62/1.0	✓							
EM0802745-136	11-APR-2008 15:00	4A/T4/0.25	✓							
EM0802745-137	11-APR-2008 15:00	4A/T4/0.5	✓							
EM0802745-138	11-APR-2008 15:00	4A/T4/1.0	✓							
EM0802745-139	11-APR-2008 15:00	4A/T4/2.0	✓							
EM0802745-141	10-APR-2008 15:00	4A/QS-5				✓		✓		✓
EM0802745-142	11-APR-2008 15:00	4A/QS-6	✓							
EM0802745-143	11-APR-2008 15:00	4A/QS-8	✓							
EM0802745-144	08-APR-2008 15:00	4A/QS-10	✓							
EM0802745-145	11-APR-2008 15:00	4A/QS-11	✓							

			(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-16 EPA 448.3 Comprehensive	SOIL - S-03A 17 Metals (incl. Digestion)
EM0802745-154	[08-APR-2008]	4A/C1		✓		✓		✓		✓
EM0802745-155	[08-APR-2008]	4A/C2		✓		✓		✓		✓
EM0802745-156	[08-APR-2008]	4A/C3				✓		✓		✓
EM0802745-157	[09-APR-2008]	4A/C4				✓				✓
EM0802745-158	[09-APR-2008]	4A/C5				✓				✓
EM0802745-159	[14-APR-2008]	4A/C6	✓							
EM0802745-160	[09-APR-2008]	4A/C7				✓		✓		✓
EM0802745-161	[09-APR-2008]	4A/C8				✓				✓
EM0802745-162	[09-APR-2008]	4A/C9		✓		✓		✓		✓
EM0802745-163	[10-APR-2008]	4A/C10				✓				✓
EM0802745-164	[10-APR-2008]	4A/C11				✓		✓		✓
EM0802745-165	[14-APR-2008]	4A/C12	✓							
EM0802745-166	[10-APR-2008]	4A/C13				✓		✓		✓
EM0802745-167	[10-APR-2008]	4A/C14		✓		✓				✓
EM0802745-168	[10-APR-2008]	4A/C15				✓		✓		✓
EM0802745-169	[11-APR-2008]	4A/C16				✓				✓
EM0802745-170	[11-APR-2008]	4A/C17				✓				✓
EM0802745-171	[11-APR-2008]	4A/C18			✓			✓		
EM0802745-172	[14-APR-2008]	4A/C19				✓		✓		✓
EM0802745-173	[14-APR-2008]	4A/C20				✓				✓
EM0802745-174	[14-APR-2008]	4A/C21				✓				✓
EM0802745-175	[14-APR-2008]	4A/C22		✓		✓				✓
EM0802745-176	[14-APR-2008]	4A/C23				✓		✓		✓
EM0802745-177	[14-APR-2008]	4A/C24			✓			✓		
EM0802745-178	[14-APR-2008]	4A/C25				✓				✓
EM0802745-179	[14-APR-2008]	4A/C26				✓				✓
EM0802745-180	[14-APR-2008]	4A/C27		✓		✓				✓
EM0802745-181	[08-APR-2008]	4A/C28		✓		✓		✓		✓
EM0802745-182	[08-APR-2008]	4A/C29				✓		✓		✓
EM0802745-183	[08-APR-2008]	4A/C30				✓		✓		✓
EM0802745-184	[08-APR-2008]	4A/C31		✓		✓				✓
EM0802745-185	[08-APR-2008]	4A/32				✓				✓
EM0802745-186	[14-APR-2008]	4A/33	✓							
EM0802745-187	[08-APR-2008]	4A/34				✓		✓		✓
EM0802745-188	[08-APR-2008]	4A/35				✓		✓		✓
EM0802745-189	[08-APR-2008]	4A/36				✓		✓		✓
EM0802745-190	[07-APR-2008]	4A/37				✓				✓
EM0802745-191	[07-APR-2008]	4A/C38		✓		✓				✓
EM0802745-192	[14-APR-2008]	4A/C39	✓							
EM0802745-193	[08-APR-2008]	4A/C40				✓		✓		✓
EM0802745-194	[08-APR-2008]	4A/C41				✓		✓		✓

			(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-16 EPA 448.3 Comprehensive	SOIL - S-03A 17 Metals (incl. Digestion)
EM0802745-195	[08-APR-2008]	4A/C42		✓		✓		✓		✓
EM0802745-196	[08-APR-2008]	4A/C43		✓		✓				✓
EM0802745-197	[08-APR-2008]	4A/C44				✓				✓
EM0802745-198	[14-APR-2008]	4A/C45	✓							
EM0802745-199	[15-APR-2008]	4A/C46				✓		✓		✓
EM0802745-200	[15-APR-2008]	4A/C47		✓		✓		✓		✓
EM0802745-201	[15-APR-2008]	4A/C48				✓		✓		✓
EM0802745-202	15-APR-2008 15:00	4A/G24/0.25	✓							
EM0802745-203	15-APR-2008 15:00	4A/G24/0.5	✓							
EM0802745-204	15-APR-2008 15:00	4A/G24/1.0	✓							
EM0802745-205	15-APR-2008 15:00	4A/G26/0.25		✓		✓		✓		✓
EM0802745-206	15-APR-2008 15:00	4A/G26/0.5		✓		✓		✓		✓
EM0802745-207	15-APR-2008 15:00	4A/G26/1.0						✓		
EM0802745-208	14-APR-2008 15:00	4A/G27/0.25	✓							
EM0802745-209	14-APR-2008 15:00	4A/G27/0.5	✓							
EM0802745-210	14-APR-2008 15:00	4A/G27/1.0	✓							
EM0802745-211	14-APR-2008 15:00	4A/G28/0.25		✓		✓		✓		✓
EM0802745-212	14-APR-2008 15:00	4A/G28/0.5		✓		✓		✓		✓
EM0802745-213	14-APR-2008 15:00	4A/G28/1.0				✓		✓		✓
EM0802745-214	14-APR-2008 15:00	4A/G29/0.25	✓							
EM0802745-215	14-APR-2008 15:00	4A/G29/0.5	✓							
EM0802745-216	14-APR-2008 15:00	4A/G29/1.0	✓							
EM0802745-217	14-APR-2008 15:00	4A/G30/0.25	✓							
EM0802745-218	14-APR-2008 15:00	4A/G30/0.5	✓							
EM0802745-219	14-APR-2008 15:00	4A/G30/1.0	✓							
EM0802745-220	14-APR-2008 15:00	4A/G31/0.25	✓							
EM0802745-221	14-APR-2008 15:00	4A/G31/0.5	✓							
EM0802745-222	14-APR-2008 15:00	4A/G31/1.0	✓							
EM0802745-223	14-APR-2008 15:00	4A/G32/0.25	✓							
EM0802745-224	14-APR-2008 15:00	4A/G32/0.5	✓							
EM0802745-225	14-APR-2008 15:00	4A/G32/1.0	✓							
EM0802745-226	14-APR-2008 15:00	4A/G33/0.25		✓		✓		✓		✓
EM0802745-227	14-APR-2008 15:00	4A/G33/0.5		✓		✓		✓		✓
EM0802745-228	14-APR-2008 15:00	4A/G33/1.0		✓				✓		
EM0802745-229	14-APR-2008 15:00	4A/G34/0.25	✓							
EM0802745-230	14-APR-2008 15:00	4A/G34/0.5	✓							
EM0802745-231	14-APR-2008 15:00	4A/G34/1.0	✓							
EM0802745-232	14-APR-2008 15:00	4A/G35/0.25	✓							
EM0802745-233	14-APR-2008 15:00	4A/G35/0.5	✓							
EM0802745-234	14-APR-2008 15:00	4A/G35/1.0	✓							
EM0802745-235	14-APR-2008 15:00	4A/G36/0.25	✓							

			(On Hold) SOIL No analysis requested	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-16 EPA 448.3 Comprehensive	SOIL - S-03A 17 Metals (incl. Digestion)
EM0802745-236	14-APR-2008 15:00	4A/G36/0.5	✓							
EM0802745-237	14-APR-2008 15:00	4A/G36/1.0	✓							
EM0802745-238	14-APR-2008 15:00	4A/G37/0.25	✓							
EM0802745-239	14-APR-2008 15:00	4A/G37/0.5	✓							
EM0802745-240	14-APR-2008 15:00	4A/G37/1.0	✓							
EM0802745-241	14-APR-2008 15:00	4A/G38/0.25	✓							
EM0802745-242	14-APR-2008 15:00	4A/G38/0.5	✓							
EM0802745-243	14-APR-2008 15:00	4A/G38/1.0	✓							
EM0802745-244	14-APR-2008 15:00	4A/G39/0.25	✓							
EM0802745-245	14-APR-2008 15:00	4A/G39/0.5	✓							
EM0802745-246	14-APR-2008 15:00	4A/G39/1.0	✓							
EM0802745-247	15-APR-2008 15:00	4A/G56/0.25	✓							
EM0802745-248	15-APR-2008 15:00	4A/G56/0.5	✓							
EM0802745-249	15-APR-2008 15:00	4A/G56/1.0	✓							
EM0802745-250	15-APR-2008 15:00	4A/G57/0.25	✓							
EM0802745-251	15-APR-2008 15:00	4A/G57/0.5	✓							
EM0802745-252	15-APR-2008 15:00	4A/G57/1.0	✓							
EM0802745-253	15-APR-2008 15:00	4A/G58/0.25	✓							
EM0802745-254	15-APR-2008 15:00	4A/G58/0.5	✓							
EM0802745-255	15-APR-2008 15:00	4A/G58/1.0	✓							
EM0802745-256	15-APR-2008 15:00	4A/QS-3				✓		✓		✓
EM0802745-257	15-APR-2008 15:00	4A/QS-7	✓							
EM0802745-258	15-APR-2008 15:00	4A/QS-9	✓							

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - S-12 OC/OP Pesticides	SOIL - TPH only TPH (C6 - C36)
EM0802745-001	10-APR-2008 15:00	4A/G1/0.25		✓
EM0802745-002	10-APR-2008 15:00	4A/G1/0.5		✓
EM0802745-003	10-APR-2008 15:00	4A/G1/1.0		✓
EM0802745-010	10-APR-2008 15:00	4A/G4/0.25		✓
EM0802745-011	10-APR-2008 15:00	4A/G4/0.5		✓
EM0802745-012	10-APR-2008 15:00	4A/G4/1.0		✓
EM0802745-025	09-APR-2008 15:00	4A/G9/0.25		✓

			SOIL - S-12 OC/OP Pesticides	SOIL - TPH only TPH (C6 - C36)
EM0802745-026	09-APR-2008 15:00	4H/G9/0.5		✓
EM0802745-027	09-APR-2008 15:00	4H/G9/1.0		✓
EM0802745-031	09-APR-2008 15:00	4A/G11/0.25	✓	✓
EM0802745-032	09-APR-2008 15:00	4A/G11/0.5	✓	✓
EM0802745-033	09-APR-2008 15:00	4A/G11/1.0	✓	✓
EM0802745-048	10-APR-2008 15:00	4A/G16/0.25	✓	✓
EM0802745-049	10-APR-2008 15:00	4A/G16/0.5	✓	✓
EM0802745-050	10-APR-2008 15:00	4A/G16/1.0	✓	✓
EM0802745-063	11-APR-2008 15:00	4A/G21/0.25	✓	✓
EM0802745-064	11-APR-2008 15:00	4A/G21/0.5	✓	✓
EM0802745-065	11-APR-2008 15:00	4A/G21/1.0	✓	✓
EM0802745-069	11-APR-2008 15:00	4A/G23/0.25	✓	✓
EM0802745-070	11-APR-2008 15:00	4A/G23/0.5	✓	✓
EM0802745-071	11-APR-2008 15:00	4A/G23/1.0	✓	✓
EM0802745-075	08-APR-2008 15:00	4A/G40/0.25	✓	✓
EM0802745-076	08-APR-2008 15:00	4A/G40/0.5		✓
EM0802745-077	08-APR-2008 15:00	4A/G40/1.0		✓
EM0802745-103	08-APR-2008 15:00	4A/G49/0.25	✓	✓
EM0802745-104	08-APR-2008 15:00	4A/G49/0.5	✓	✓
EM0802745-105	08-APR-2008 15:00	4A/G49/1.0	✓	✓
EM0802745-106	07-APR-2008 15:00	4A/G50/0.25	✓	✓
EM0802745-107	07-APR-2008 15:00	4A/G50/0.5	✓	✓
EM0802745-108	07-APR-2008 15:00	4A/G50/1.0	✓	✓
EM0802745-124	11-APR-2008 15:00	4A/G59/0.25	✓	✓
EM0802745-125	11-APR-2008 15:00	4A/G59/0.5	✓	✓
EM0802745-126	11-APR-2008 15:00	4A/G59/1.0	✓	✓
EM0802745-140	09-APR-2008 15:00	4A/QS-4	✓	
EM0802745-141	10-APR-2008 15:00	4A/QS-5		✓
EM0802745-154	[08-APR-2008]	4A/C1	✓	
EM0802745-155	[08-APR-2008]	4A/C2	✓	
EM0802745-162	[09-APR-2008]	4A/C9	✓	
EM0802745-167	[10-APR-2008]	4A/C14	✓	
EM0802745-175	[14-APR-2008]	4A/C22	✓	
EM0802745-180	[14-APR-2008]	4A/C27	✓	
EM0802745-181	[08-APR-2008]	4A/C28	✓	
EM0802745-183	[08-APR-2008]	4A/C30	✓	
EM0802745-191	[07-APR-2008]	4A/C38	✓	
EM0802745-195	[08-APR-2008]	4A/C42	✓	
EM0802745-196	[08-APR-2008]	4A/C43	✓	
EM0802745-200	[15-APR-2008]	4A/C47	✓	
EM0802745-205	15-APR-2008 15:00	4A/G26/0.25	✓	✓

			SOIL - S-12 OC/OP Pesticides	SOIL - TPH only TPH (C6 - C36)
EM0802745-206	15-APR-2008 15:00	4A/G26/0.5	✓	✓
EM0802745-207	15-APR-2008 15:00	4A/G26/1.0	✓	✓
EM0802745-211	14-APR-2008 15:00	4A/G28/0.25	✓	✓
EM0802745-212	14-APR-2008 15:00	4A/G28/0.5	✓	✓
EM0802745-213	14-APR-2008 15:00	4A/G28/1.0	✓	✓
EM0802745-226	14-APR-2008 15:00	4A/G33/0.25	✓	✓
EM0802745-227	14-APR-2008 15:00	4A/G33/0.5	✓	✓
EM0802745-228	14-APR-2008 15:00	4A/G33/1.0	✓	✓
EM0802745-256	15-APR-2008 15:00	4A/QS-3		✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EG020A-F Dissolved Metals by ICPMS - Suite A	WATER - EP071(SV-TPH-WD) Total Petroleum Hydrocarbons (TPH)	WATER - EP075 SIM PAH only SIM - PAH only	WATER - W-03A 17 Metals
EM0802745-146	15-APR-2008 15:00	4A/TB-1		✓		
EM0802745-147	07-APR-2008 15:00	4A/RB-1		✓		
EM0802745-148	08-APR-2008 15:00	4A/TB-2	✓			✓
EM0802745-149	08-APR-2008 15:00	4A/RB-2	✓			✓
EM0802745-150	15-APR-2008 15:00	4A/TB-3			✓	
EM0802745-151	15-APR-2008 15:00	4A/RB-3			✓	
EM0802745-152	15-APR-2008 15:00	4A/TB-4		✓		
EM0802745-153	15-APR-2008 15:00	4A/RB-4		✓		
EM0802745-259	14-APR-2008 15:00	4A/RB6		✓		
EM0802745-260	15-APR-2008 15:00	4A/RB7	✓			✓
EM0802745-261	11-APR-2008 15:00	4A/RB5	✓			✓

Requested Deliverables

MS CHANTEL WEBBER

- A4 - AU Tax Invoice	Email	chantelwebber@otek.com.au

MS EMILY BURKE

- *AU Certificate of Analysis - NATA	Email	eburke@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	eburke@otek.com.au
- *AU QC Report – DEFAULT (Anon QC Rep) - NATA	Email	eburke@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	eburke@otek.com.au
- Default - Chain of Custody	Email	eburke@otek.com.au
- EDI Format - ENMRG	Email	eburke@otek.com.au
- EDI Format - ESDAT	Email	eburke@otek.com.au
- Trigger - Subcontract Report	Email	eburke@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	vicreception@otek.com.au
- *AU QC Report – DEFAULT (Anon QC Rep) - NATA	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice	Email	vicreception@otek.com.au
- Default - Chain of Custody	Email	vicreception@otek.com.au
- EDI Format - ENMRG	Email	vicreception@otek.com.au
- EDI Format - ESDAT	Email	vicreception@otek.com.au
- Trigger - Subcontract Report	Email	vicreception@otek.com.au

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref: ASET14910/ 18090 / 1 - 23
Your ref: EM0802745
NATA Accreditation No: 14484

22 April 2008

Australian Laboratory Services Pty Ltd
4, Westall Road
Springvale VIC 3171

Attn: Mr Paul Loewy

Dear Paul,

Asbestos Identification
This report presents the results of twenty three samples, forwarded by Australian Laboratory Services Pty Ltd on 16 April 2008, for analysis for asbestos. This report supersedes the report issued earlier today.

1.Introduction Twenty three samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1.)**

3. Results :

Sample No. 1. ASET14910 / 18090 / 1. EM0802745 - 1.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET14910 / 18090 / 2. EM0802745 - 4.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 3. ASET14910 / 18090 / 3. EM0802745 - 7.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 4. ASET14910 / 18090 / 4. EM0802745 - 10.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 5. ASET14910 / 18090 / 5. EM0802745 - 16.
Approx dimensions 14.0 cm x 6.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 6. ASET14910 / 18090 / 6. EM0802745 - 19.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 7. ASET14910 / 18090 / 7. EM0802745 - 25.
Approx dimensions 14.0 cm x 4.0 cm x 2.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 8. ASET14910 / 18090 / 8. EM0802745 - 28.
Approx dimensions 14.0 cm x 5.0 cm x 3.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 9. ASET14910 / 18090 / 9. EM0802745 - 37.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 10. ASET14910 / 18090 / 10. EM0802745 - 48.
Approx dimensions 6.0 cm x 5.0 cm x 3.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 11. ASET14910 / 18090 / 11. EM0802745 - 54.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of mixture of plastic clay, stones and plant matter.
No asbestos detected.

Sample No. 12. ASET14910 / 18090 / 12. EM0802745 - 57.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 13. ASET14910 / 18090 / 13. EM0802745 - 69.
Approx dimensions 14.0 cm x 5.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 14. ASET14910 / 18090 / 14. EM0802745 -75.
Approx dimensions 6.0 cm x 4.0 cm x 1.0 cm
The sample consisted of a mixture of sandy clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 15. ASET14910 / 18090 / 15. EM0802745 -76.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 16. ASET14910 / 18090 / 16. EM0802745 - 77.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 17. ASET14910 / 18090 / 17. EM0802745 - 82.
Approx dimensions 6.0 cm x 4.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 18. ASET14910 / 18090 / 18. EM0802745 - 88.
Approx dimensions 6.0 cm x 4.5 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 19. ASET14910 / 18090 / 19. EM0802745 - 94.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 20. ASET14910 / 18090 / 20. EM0802745 - 103.
Approx dimensions 14.0 cm x 6.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 21. ASET14910 / 18090 / 21. EM0802745 - 115.
Approx dimensions 6.0 cm x 4.5 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 22. ASET14910 / 18090 / 22. EM0802745 - 124.
Approx dimensions 6.0 cm x 5.0 cm x 1.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 23. ASET14910 / 18090 / 23. EM0802745 - 133.
Approx dimensions 14.0 cm x 5.0 cm x 4.0 cm
The sample consisted of a mixture of fine sandy clayish soil, stones and plant matter.
No asbestos detected.

Analysed and reported by,

Karu Jayasundara. BSc (Hons) MAus IMM.
Mineralogist / Chartered Professional of Geology
Approved Signatory/Approved Identifier

This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET14938/ 18118 / 1 - 7
Your ref: EM0802745
NATA Accreditation No: 14484

23 April 2008

Australian Laboratory Services Pty Ltd
4, Westal Road
Springvale VIC 3171

Attn: Mr Paul Loewy

Dear Paul,

Asbestos Identification
This report presents the results of seven samples, forwarded by Australian Laboratory Services Pty Ltd on 21 April 2008, for analysis for asbestos.

1.Introduction: Seven samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1.)**

3. Results :

Sample No. 1. ASET14938 / 18118 / 1. EM0802745 - 205.
Approx dimensions 14.0 cm x 5.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET14938 / 18118 / 2. EM0802745 - 214.
Approx dimensions 14.0 cm x 5.0 cm x 4.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 3. ASET14938 / 18118 / 3. EM0802745 - 220.
Approx dimensions 14.0 cm x 5.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 4. ASET14938 / 18118 / 4. EM0802745 - 226.
Approx dimensions 14.0 cm x 5.0 cm x 3.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 5. ASET14938 / 18118 / 5. EM0802745 - 235.
Approx dimensions 14.0 cm x 5.0 cm x 5.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 6. ASET14938 / 18118 / 6. EM0802745 - 238.
Approx dimensions 14.0 cm x 5.0 cm x 3.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 7. ASET14938 / 18118 / 7. EM0802745 - 250.
Approx dimensions 14.0 cm x 6.0 cm x 6.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Analysed and reported by,

Karu Jayasundara. BSc (Hons) MAus IMM.
Mineralogist / Chartered Professional of Geology
Approved Signatory/Approved Identifier

This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

CHAIN OF CUSTODY DOCUMENTATION

TAT: 5 DAY
DUE DATE: 20/04/2008

PURCHASE ORDER #: 350053

ALS BATCH #: EM0802745

FROM:
ALS Environmental,
2-4 Westall Road,
Springvale, Vic, 3171

TO:
ASET,
7/70 Kingsway,
Glenwaverly, Vic, 3150

Please email results to: subresults.mel@alsenviro.com

LABORATORY PERAMETERS

SAMPLE IDENTIFICATION	CONTAINER DETAILS			LABORATORY PERAMETERS
	DATE:	TYPE:	NO.	ASBESTOS
EM0802745 - 1,4, 7,10,16,19,25,28,37,48,54	8-Apr	SOIL	24	X
57,69,75,76,77,82,88,94,103,115,124,133,	11-Apr			
136,				

NOTES:
1. Please ensure that a signed copy is faxed back immediately to ALS Melbourne acknowledging receipt.
2. Contact Paul Loewy if the requested TAT cannot be met 03 8549 9600

RELINQUISHED BY (SIGN / PRINT): Carla McFadyen	DATE: 15/4/08	RECEIVED BY (SIGN / PRINT):	DATE:
OF: ALS	TIME: 12:59 PM	OF: (ARRIVAL TEMP: deg.C)	TIME:
RELINQUISHED BY (SIGN / PRINT):	DATE:	RECEIVED BY (SIGN / PRINT)	DATE:
OF: ALS	TIME:	OF: (ARRIVAL TEMP: deg.C)	TIME:

ALS Environmental

CHAIN OF CUSTODY DOCUMENTATION

TAT: 5 DAY
DUE DATE: 22/04/2008

PURCHASE ORDER #:
350057

ALS BATCH #:
EM0802745

FROM:
ALS Environmental,
2-4 Westall Road,
Springvale, Vic, 3171

TO:
ASET,
7/70 Kingsway,
Glenwaverly, Vic, 3150

Please email results to: subresults.mel@alsenviro.com

LABORATORY PERAMETERS

SAMPLE IDENTIFICATION	CONTAINER DETAILS			LABORATORY PERAMETERS							
	DATE:	TYPE:	NO.	ASBESTOS							
EM0802745 - 205,214,220,226,235,238,	14-Apr	SOIL	7	X							
250											

NOTES:
1. Please ensure that a signed copy is faxed back immediately to ALS Melbourne acknowledging receipt.
2. Contact Paul Loewy if the requested TAT cannot be met 03 8549 9600

RELINQUISHED BY (SIGN / PRINT): Carla McFadyen	DATE: 17/4/08	RECEIVED BY (SIGN / PRINT):	DATE:
OF: ALS	TIME: 12:21 PM	OF: (ARRIVAL TEMP: deg.C)	TIME:
RELINQUISHED BY (SIGN / PRINT):	DATE:	RECEIVED BY (SIGN / PRINT)	DATE:
OF: ALS	TIME:	OF: (ARRIVAL TEMP: deg.C)	TIME:

ALS Environmental

SRN 29TH
MOVE BACK 24TH
RCD DATE 17TH.

17M+V

Environmental Division
Melbourne
Work Order MO SH
EM0802745

Telephone : +61-3-8549 9600

CHAIN OF CUSTODY & ANALYSIS REQUEST

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

Page 1 of 1

ALS
4 Westall Rd, Springvale
Tim Kilmister
8549 9600

PROJECT # 3106004
PROJECT NAME: Werribee Area 4
COLLECTORS NAME: Emily Burke
eburke@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: lsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189
REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: METALS (see below*)	BTEX & TPH (C6-C9)	TPH (C6-C36)	Pb	PAH	PHENOLS	PCBs	OCP	OPP	CYANIDE & SOLUBLE FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	ETHYLENE GLYCOL	PHOSPHOROUS	RADIUM	SULPHATE	TRITIUM	VIC EPA SCREEN	VCH	ON HOLD
														Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std
4A/ G1 /0.25	0.25	1		X			X				10-Apr-08	1		X		X		X			X				X	X														
4A/ G1 /0.5	0.50	2		X			X				10-Apr-08	1		X		X		X			X				X														
4A/ G1 /1.0	1.00	3		X			X				10-Apr-08	1		X		X		X			X				X														
4A/ G2 /0.25	0.25	4		X			X				10-Apr-08	1													X															
4A/ G2 /0.5	0.50	5		X			X				10-Apr-08	1																												X
4A/ G2 /1.0	1.00	6		X			X				10-Apr-08	1																												X
4A/ G3 /0.25	0.25	7		X			X				10-Apr-08	1													X															
4A/ G3 /0.5	0.50	8		X			X				10-Apr-08	1																												X
4A/ G3 /1.0	1.00	9		X			X				10-Apr-08	1																												X
4A/ G4 /0.25	0.25	10		X			X				10-Apr-08	2		X		X		X			X				X	X														
4A/ G4 /0.5	0.50	11		X			X				10-Apr-08	1		X		X		X			X					X														
4A/ G4 /1.0	1.00	12		X			X				10-Apr-08	1				X		X			X					X														
4A/ G5 /0.25	0.25	13		X			X				11 Apr 08	1																												X
4A/ G5 /0.5	0.50	14		X			X				11/Apr/08	1																												X
4A/ G5 /1.0	1.00	15		X			X				11 Apr 08	1																												X
~~4A/ G6 /0.25~~	~~0.25~~																																								
4A/ G6 /0.25	0.25	16		X			X				8-Apr-08	1													X															
4A/ G6 /0.5	0.50	17		X			X				8-Apr-08	1																												X
4A/ G6 /1.0	1.00	18		X			X				8-Apr-08	1																												X
4A/ G7 /0.25	0.25	19		X			X				9-Apr-08	1													X													X		
4A/ G7 /0.5	0.50	20		X			X				9-Apr-08	1																												X
4A/ G7 /1.0	1.00	21		X			X				9-Apr-08	1																												X
4A/ G8 /0.25	0.25	22		X			X				9-Apr-08	1																												X
4A/ G8 /0.5	0.50	23		X			X				9-Apr-08	1																												X
4A/ G8 /1.0	1.00	24		X			X				9-Apr-08	1																												X
4A/ G9 /0.25	0.25	25		X			X				9-Apr-08	2		X		X		X			X				X	X														
4H G9 /0.5	0.50	26		X			X				9-Apr-08	1		X		X		X			X					X														
4H G9 /1.0	1.00	27		X			X				9-Apr-08	1		X		X		X			X																			
		This Page		27			27					27		8		9		9			9					7	7												1		

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by:	Date	Time	Received by:	Date	Time
[illegible]	14/4/08		[illegible]	14/4/08	
Relinquished by:	Date	Time	Received by: RANIL (ALS)	Date 14/4	Time 1 PM

Custody Seals Intact? ✓
Samples Received Chilled? ✓

Additional Comments:
* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

SCANNED

17M +V.

5.9 - 7.3°C

1:23pm DW 15/4/08 - PH ONLY

4:38pm DW 18/4/08 complete.

p1 of 15

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd, Springvale
Tim Kilmister
8549 9600

PROJECT # 3106004
PROJECT NAME: Werribee Area 4
COLLECTORS NAME: Emily Burke
eburke@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL
FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au
LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189
REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*)	BTEX & TPH (C6-C9)	TPH (C6-C36)	Pb	PAH	PHENOLS	PCBs	OCP/OPP	OPP	CYNIDE & SOLUBLE FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	ETHYLENE GLYCOL	PHOSPHOROUS	RADIUM	SULPHATE	TRITIUM	VIC EPA SCREEN	VOH	ON HOLD
														Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	PQLs Required (ug/L)
4A/ G10 /0.25	0.25	26		X			X				9-Apr-08	1													X														
4A/ G10 /0.5	0.50	29		X			X				9-Apr-08	1																											X
4A/ G10 /1.0	1.00	30		X			X				9-Apr-08	1																											X
4A/ G11 /0.25	0.25	31		X			X				9-Apr-08	1		X		X		X			X					X													
4A/ G11 /0.5	0.50	32		X			X				9-Apr-08	1		X		X		X			X					X													
4A/ G11 /1.0	1.00	33		X			X				9-Apr-08	1		X		X		X			X																	
4A/ G12 /0.25	0.25	34		X			X				9-Apr-08	1																											X
4A/ G12 /0.5	0.50	35		X			X				9-Apr-08	1																											X
4A/ G12 /1.0	1.00	36		X			X				9-Apr-08	1																											X
4A/ G13 /0.25	0.25	37		X			X				9-Apr-08	1													X														
4A/ G13 /0.5	0.50	38		X			X				9-Apr-08	1																											X
4A/ G13 /1.0	1.00	39		X			X				9-Apr-08	1																											X
4A/ G14 /0.1	0.10	40		X			X				10-Apr-08	1																									X		
4A/ G14 /0.25	0.25	41		X			X				10-Apr-08	1																											X
4A/ G14 /0.5	0.50	42		X			X				10-Apr-08	1																											X
4A/ G14 /1.0	1.00	43		X			X				10-Apr-08	1																											X
4A/ G14 /0.1	0.10	44		X			X				10-Apr-08	1																											X
4A/ G15 /0.25	0.25	45		X			X				10-Apr-08	1																											X
4A/ G15 /0.5	0.50	46		X			X				10-Apr-08	1																											X
4A/ G15 /1.0	1.00	47		X			X				10-Apr-08	1																											X
4A/ G16 /0.25	0.25	48		X			X				10-Apr-08	1		X		X		X			X					X	X												
4A/ G16 /0.5	0.50	49		X			X				10-Apr-08	1		X		X		X			X					X													
4A/ G16 /1.0	1.00	50		X			X				10-Apr-08	1				X		X			X						X												
4A/ G17 /0.25	0.25	51		X			X				10-Apr-08	1																											X
4A/ G17 /0.5	0.50	52		X			X				10-Apr-08	1																											X
4A/ G17 /1.0	1.00	53		X			X				10-Apr-08	1																											X
4A/ G18 /0.25	0.25	54		X			X				10-Apr-08	1													X														
4A/ G18 /0.5	0.50	55		X			X				10-Apr-08	1																											X
4A/ G18 /1.0	1.00	56		X			X				10-Apr-08	1																											X
This Page				29			29					29		5		6		6			6					4	5											1		

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
ESDAT	14/04/08			14/4/08	
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

Custody Seals Intact?
Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

(2) of 5

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd, Springvale
Tim Kilmister
8549 9600

PROJECT # 3106004
PROJECT NAME: Werribee Area 4
COLLECTORS NAME: Emily Burke
eburke@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL
FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au
LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189
REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	BTEX & TPH (C6-C9) Std	TPH (C6-C36) Std	Pb Std	PAH Std	PHENOLS Std	PCBs Std	OCP/OPP Std	OPP Std	CYNIDE & SOLUBLE FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	ETHYLENE GLYCOL Std	PHOSPHOROUS Std	RADIUM Std	SULPHATE Std	TRITIUM Std	VIC EPA SCREEN Std	VOH Std	ON HOLD
4A/ G19 /0.25	0.25	57		X			X				11 Apr 08	1													X													
4A/ G19 /0.5	0.50	58		X			X				11 Apr 08	1																										X
4A/ G19 /1.0	1.00	59		X			X				11 Apr 08	1																										X
4A/ G20 /0.25	0.25	60		X			X				" "	1																										X
4A/ G20 /0.5	0.50	61		X			X				" "	1																										X
4A/ G20 /1.0	1.00	62		X			X				" "	1																										X
4A/ G21 /0.25	0.25	63		X			X				" "	1		X		X		X			X					X												
4A/ G21 /0.5	0.50	64		X			X				" "	1		X		X		X			X					X												
4A/ G21 /1.0	1.00	65		X			X				" "	1		X		X		X			X																	
4A/ G22 /0.25	0.25	66		X			X				" "	1																										X
4A/ G22 /0.5	0.50	67		X			X				" "	1																										X
4A/ G22 /1.0	1.00	68		X			X				" "	1																										X
4A/ G23 /0.25	0.25	69		X			X				" "	1		X		X		X			X				X	X												
4A/ G23 /0.5	0.50	70		X			X				" "	1		X		X		X			X					X												
4A/ G23 /1.0	1.00	71		X			X					1				X		X			X					X												
~~4A/ G24 /0.25~~	~~0.25~~			~~X~~			~~X~~					1																										X
~~4A/ G24 /0.5~~	~~0.50~~			X			X					1																										X
~~4A/ G24 /1.0~~	~~1.00~~			~~X~~			~~X~~					1																										X
4A/ G25 /0.25	0.25	72		X			X				11 Apr 08	1																										X
4A/ G25 /0.5	0.50	73		X			X				11 Apr 08	1																										X
4A/ G25 /1.0	1.00	74		X			X				11 Apr 08	1																										X
~~4A/ G26 /0.25~~	~~0.25~~			~~X~~			~~X~~					1		X		X		X			X					X												
~~4A/ G26 /0.5~~	~~0.50~~			~~X~~			~~X~~					1		X		X		X			X					X												
~~4A/ G26 /1.0~~	~~1.00~~			~~X~~			~~X~~					1				X		X			X																	
~~4A/ G27 /0.25~~	~~0.25~~			~~X~~			~~X~~					1																										X
~~4A/ G27 /0.5~~	~~0.50~~			~~X~~			~~X~~					1																										X
~~4A/ G27 /1.0~~	~~1.00~~			~~X~~			~~X~~					1																										X
This Page				27			27					27		7		9		9			9					3	7												

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by:	Date	Time	Received by:	Date	Time
EJB	14/4/08			14/4/08	
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact?
Samples Received Chilled?

Additional Comments:
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CHAIN OF CUSTODY & ANALYSIS REQUEST

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ALS
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Tim Kilmister
8549 9600

PROJECT # 3106004
PROJECT NAME: Wombeo Area 4
COLLECTORS NAME: Emily Burke
eburke@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY:
Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189

REMARKS

PQLs Required (ug/L)

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	BTEX & TPH (C6-C9) Std	TPH (C6-C36) Std	Pb Std	PAH Std	PHENOLS Std	PCBs Std	OCP/OPP Std	OPP Std	CYNIDE & SOLUBLE FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	ETHYLENE GLYCOL Std	PHOSPHOROUS Std	RADIUM Std	SULPHATE Std	TRITIUM Std	VIC EPA SCREEN Std	VCH Std	ON HOLD
4A/ G37 /0.25	0.25			X			X				9-Apr-08	1													X													
4A/ G37 /0.5	0.50			X			X				9-Apr-08	1																											X
4A/ G37 /1.0	1.00			X			X				9-Apr-08	1																											X
4A/ G38 /0.25	0.25			X			X					1																											X
4A/ G38 /0.5	0.50			X			X					1																											X
4A/ G38 /1.0	1.00			X			X					1																											X
4A/ G39 /0.25	0.25			X			X					1																											X
4A/ G39 /0.5	0.50			X			X					1																											X
4A/ G39 /1.0	1.00			X			X					1																											X
4A/ G40 /0.25	0.25	75		X			X				8-Apr-08	1		X		X		X			X				X	X												
4A/ G40 /0.5	0.50	76		X			X				8-Apr-08	1		X		X		X							X	X												
4A/ G40 /1.0	1.00	77		X			X				8-Apr-08	1		X		X		X							X													
4A/ G40 /0.1	0.10	78		X			X				8-Apr-08	1		X				X																					
4A/ G41 /0.25	0.25	79		X			X				8-Apr-08	1																											X
4A/ G41 /0.5	0.50	80		X			X				8-Apr-08	1																											X
4A/ G41 /1.0	1.00	81		X			X				8-Apr-08	1																											X
4A/ G42 /0.25	0.25	82		X			X				8-Apr-08	1													X													
4A/ G42 /0.5	0.50	83		X			X				8-Apr-08	1																											X
4A/ G42 /1.0	1.00	84		X			X				8-Apr-08	1																											X
4A/ G43 /0.25	0.25	85		X			X				8-Apr-08	1																											X
4A/ G43 /0.5	0.50	86		X			X				8-Apr-08	1																											X
4A/ G43 /1.0	1.00	87		X			X				8-Apr-08	1																											X
4A/ G44 /0.25	0.25	88		X			X				8-Apr-08	1													X													
4A/ G44 /0.5	0.50	89		X			X				8-Apr-08	1																											X
4A/ G44 /1.0	1.00	90		X			X				8-Apr-08	1																											X
4A/ G45 /0.25	0.25	91		X			X					1																											X
4A/ G45 /0.5	0.50	92		X			X					1																											X
4A/ G45 /1.0	1.00	93		X			X					1																											X
This Page				28			28					28		4		3		4			1				6	2													

Midrim

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by:	Date	Time	Received by:	Date	Time
EJB	4/04/08			14/4/08	
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

CHAIN OF CUSTODY & ANALYSIS REQUEST

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
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Fx (03) 9593 8555

ALS
4 Westall Rd, Springvale
Tim Kilmister
8549 9600

PROJECT #: 3106004
PROJECT NAME: Werribee Area 4
COLLECTORS NAME: Emily Burke
eburke@otek.com.au
LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189

REMARKS

ANALYSIS REQUIRED

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*)	BTEX & TPH (C6-C9)	TPH (C6-C36)	Pb	PAH	PHENOLS	PCBs	OCP/OPP	OPP	CYNIDE & SOLUBLE FLOURIDE	E COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	ETHYLENE GLYCOL	PHOSPHOROUS	RADIUM	SULPHATE	TRITIUM	VIC EPA SCREEN	VOH	ON HOLD
														Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	
4A/ G46 /0.25	0.25	95		X			X				8-Apr-08	1														X														
4A/ G46 /0.5	0.50	95		X			X				8-Apr-08	1																												X
4A/ G46 /1.0	1.00	96		X			X				8-Apr-08	1																												X
4A/ G47 /0.25	0.25	97		X			X				8-Apr-08	1																												X
4A/ G47 /0.5	0.50	98		X			X				8-Apr-08	1																												X
4A/ G47 /1.0	1.00	99		X			X				8-Apr-08	1																												X
4A/ G48 /0.25	0.25	100		X			X				8-Apr-08	1																												X
4A/ G48 /0.5	0.50	101		X			X				8-Apr-08	1																												X
4A/ G48 /1.0	1.00	102		X			X				8-Apr-08	1																												X
4A/ G49 /0.25	0.25	103		X			X				8-Apr-08	2		X		X		X			X					X	X													
4A/ G49 /0.5	0.50	104		X			X				8-Apr-08	1		X		X		X			X						X													
4A/ G49 /1.0	1.00	105		X			X				8-Apr-08	1				X		X			X																			
4A/ G50 /0.25	0.25	106		X			X				7-Apr-08	1		X		X		X			X						X													
4A/ G50 /0.5	0.50	107		X			X				7-Apr-08	1		X		X		X			X						X													
4A/ G50 /1.0	1.00	108		X			X				7-Apr-08	1		X		X		X			X						X													
4A/ G51 /0.25	0.25	109		X			X				7-Apr-08	1																												X
4A/ G51 /0.5	0.50	110		X			X				7-Apr-08	1																												X
4A/ G51 /1.0	1.00	111		X			X				7-Apr-08	1																												X
4A/ G52 /0.25	0.25	112		X			X				7-Apr-08	1																												X
4A/ G52 /0.5	0.50	113		X			X				7-Apr-08	1																												X
4A/ G52 /1.0	1.00	114		X			X				7-Apr-08	1																												X
4A/ G53 /0.25	0.25	115		X			X				8-Apr-08	1														X													
4A/ G53 /0.5	0.50	116		X			X				8-Apr-08	1																												X
4A/ G53 /1.0	1.00	117		X			X				8-Apr-08	1																												X
4A/ G54 /0.25	0.25	118		X			X				8-Apr-08	1																												X
4A/ G54 /0.5	0.50	119		X			X				8-Apr-08	1																												X
4A/ G54 /1.0	1.00	120		X			X				8-Apr-08	1																												X
This Page				27			27					27		5		6		6			6					3	5													

PQLs Required (ug/L)

STANDARD 1 WEEK TURN ARQUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by:	Date	Time	Received by:	Date	Time
EBurke	14/4/08			14/4/08	
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

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PROJECT #: 3106004
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FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ON HOLD
4A/ G55 /0.25	0.25	124		X			X				8-Apr-08	1		X
4A/ G55 /0.5	0.50	122		X			X				8-Apr-08	1		X
4A/ G55 /1.0	1.00	123		X			X				8-Apr-08	1		X
4A/ G56 /0.25	0.25			X			X					1		X
4A/ G56 /0.5	0.50			X			X					1		X
4A/ G56 /1.0	1.00			X			X					1		X
4A/ G57 /0.25	0.25			X			X					1		
4A/ G57 /0.5	0.50			X			X					1		X
4A/ G57 /1.0	1.00			X			X					1		X
4A/ G58 /0.25	0.25			X			X					1		X
4A/ G58 /0.5	0.50			X			X					1		X
4A/ G58 /1.0	1.00			X			X					1		X
4A/ G59 /0.25	0.25	125		X			X				11-Apr-08	1		X
4A/ G59 /0.5	0.50	127		X			X				11-Apr-08	1		X
4A/ G59 /1.0	1.00	126		X			X				11-Apr-08	1		X
4A/ G60 /0.25	0.25	129		X			X				11-Apr-08	1		X
4A/ G60 /0.5	0.50	128		X			X				11-Apr-08	1		X
4A/ G60 /1.0	1.00	130		X			X				11-Apr-08	1		X
4A/ G61 /0.25	0.25	132		X			X				11-Apr-08	1		X
4A/ G61 /0.5	0.50	131		X			X				11-Apr-08	1		X
4A/ G61 /1.0	1.00	134		X			X				11-Apr-08	1		X
4A/ G62 /0.25	0.25	133		X			X				11-Apr-08	1		X
4A/ G62 /0.5	0.50	135		X			X				11-Apr-08	1		X
4A/ G62 /1.0	1.00	136		X			X				11-Apr-08	1		X
This Page				24			24					24		

ANALYSIS REQUIRED

METALS (see below*)	BTEX & TPH (C6-C9)	TPH (C10-C36)	Pb	PAH	PHENOLS	PCBs	OCP/OPP	OPP	CYNIDE & SOLUBLE FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	ETHYLENE GLYCOL	PHOSPHOROUS	RADIUM	SULPHATE	TRITIUM	VIC EPA SCREEN	VCH
Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std
											X														
X		X		X			X				X	X													
X		X		X			X					X													
X		X		X			X					X													
											X														
3		3		3			3				3	3													

PQLs Required (ug/L)

STANDARD 1 WEEK TURN AROUND
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Relinquished by: EOB
Date: 14/4/08 Time:
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Date: 14/4/08 Time:

Relinquished by:
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pg 1 of 5

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Tim Kilmister
95384444

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

PROJECT # 3106004
PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Emily burke eburke@otek.com.au
LAB JOB #

LAB QUOTE REF: ME/022a/06
OTEK PO No.: 21189

REMARKS

ANALYSIS REQUIRED

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	FLUORIDE Std	TPH (C10-C36) Std	Pb Std	PAH/Phenols Std	PAH Std	PHENOLS Std	OCP/OPP Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	FULL VIC EPA SCREEN Std	ON HOLD
PQLs Required (ug/L)																																		
~~4A/T1/0.25~~	~~0.25~~			X			X					2		X	X									X	X	X		X	X					
~~4A/T1/0.5~~	~~0.50~~			X			X					2														X								
~~4A/T1/1.0~~	~~1.00~~			X			X					2		X	X									X		X		X	X					
4A/T1/2.0	2.00			X			X					2																						X
~~4A/T2/0.25~~	~~0.25~~			X			X					2		X										X	X	X	X	X	X					
~~4A/T2/0.5~~	~~0.50~~			X			X					2																						X
~~4A/T2/1.0~~	~~1.00~~			X			X					2												X		X		X	X					
~~4A/T3/0.25~~	~~0.25~~			X			X					2		X		X		X			X		X	X	X	X	X	X	X				X	
~~4A/T3/0.5~~	~~0.50~~			X			X					2														X								
~~4A/T3/1.0~~	~~1.00~~			X			X					2		X		X		X			X		X	X		X	X	X	X					
~~4A/T3/2.0~~	~~2.00~~			X			X					2														X								
delete analysis 4A/T4/0.25	0.25	136		X			X				11 Apr 08	2		X										X	X	X		X	X	Analysis deleted as per client				
4A/T4/0.5	0.50	135		X			X				11 Apr 08	2																						X
delete analysis 4A/T4/1.0	1.00	135		X			X				11 Apr 08	2		X										X		X		X	X	Analysis deleted as per client				
4A/T4/2.0	2.00	139		X			X				11 Apr 08	2																						X
This Page				15			15					15		7	2	2		2			2		2	8	4	11	3	8	8				1	15

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by: [signature]	Date 14/4/08	Time	Received by: [signature]	Date 14/4/08 Time
Relinquished by:	Date	Time	Received by:	Date Time

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

CHAIN OF CUSTODY & ANALYSIS REQUEST

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
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St Kilda, 3182.
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ALS
Unit 6, 2 Sarton Road, Clayton
Tim Kilmister
95384444

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08 | OTEK PO No.: 21189

REMARKS: PQLs Required (ug/L)

PROJECT # 3106004 | PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Emily burke, eburke@otek.com.au | LAB JOB #

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE
4A/QS-1	-			X			X				10-Apr-08	1	
4A/QS-2	-			X			X					2	
4A/QS-3	-			X			X				10-Apr-08	1	
4A/QS-4	-	160		X			X				9-Apr-08	1	
4A/QS-5	-	161		X			X				10-Apr-08	1	
4A/QS-6	-	162		X			X				11 Apr 08	1	
4A/QS-7	-			X			X					1	
4A/QS-8	-	163		X			X				11 Apr 08	1	
4A/QS-9	-			X			X					1	
4A/QS-10	-	164		X			X				8 April	2	
4A/QS-11	-	165		X			X				11-Apr-08	1	
~~4A/TB-1~~	~~-~~	~~166~~	~~X~~				~~X~~				~~7-Apr-08~~	~~1~~	
~~4A/RB-1~~	~~-~~	~~167~~	~~X~~				~~X~~				~~7-Apr-08~~	~~1~~	
4A/TB-2	-	168	X				X				8-Apr-08	1	X
4A/RB-2	-	169	X				X				8-Apr-08	1	X
~~4A/TB-3~~	~~-~~	~~170~~	~~X~~				X				9-Apr-08	1	
~~4A/RB-3~~	~~-~~	~~171~~	~~X~~				X				9-Apr-08	1	
~~4A/TB-4~~	~~-~~	172	X				X				10-Apr-08	1	
~~4A/RB-4~~	~~-~~	~~173~~	~~X~~				X				10-Apr-08	1	

ANALYSIS REQUIRED

	METALS (see below*)	BTEX	TPH (C6-C36)	Pb	PAH	TPH (C10-C36)	PHENOLS	OCP/OPP	OPP	CYNIDE & FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	VCH	ON HOLD
	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	
4A/QS-1	X								(NOT				(not								
4A/QS-2	X	X	X	X																	
4A/QS-3	X		X		X				(NOT				(not								
4A/QS-4								X													
4A/QS-5	X		X		X																
4A/QS-6																					X
4A/QS-7																					X
4A/QS-8																					X
4A/QS-9																					X
4A/QS-10																					X
4A/QS-11																					X
~~4A/TB-1~~						~~X~~															
~~4A/RB-1~~						~~X~~															
4A/TB-2	X																				
4A/RB-2	X																				
~~4A/TB-3~~					X																
~~4A/RB-3~~					X																
~~4A/TB-4~~						X															
~~4A/RB-4~~						X															
This Page	4	1	3	1	4	4		1													11

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by:	Date	Time	Received by:	Date	Time
EJTS	14/4/08			14/4/08	

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

P8 of 15

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CHAIN OF CUSTODY & ANALYSIS REQUEST

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Tim Kilmister
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PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY:
Email to: lsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189

REMARKS
PQLs Required (ug/L)

PROJECT #: 3106004
PROJECT NAME: Werribee Sub-Area 4
COLLECTORS NAME: Emily Burke
eburke@otek.com.au
LAB JOB #:

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	COMPOSITE SAMPLE FROM SAMPLES	METALS (see below*) Std	BTEX & TPH (C6-C9) Std	TPH (C10-C36) Std	Pb Std	PAH Std	OCP/OPP/PCBs Std	OCP/PCBs Std	OCP/OPP Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VOH Std	ON HOLD
4A/C1	0.25	154		X			X						4A/G3/0.25, 4A/G9/0.25, 4A/G6/0.25	X				X			X						X									
4A/C2	0.50	155		X			X						4A/G3/0.5, 4A/G9/0.5, 4A/G6/0.5	X				X			X						X									
4A/C3	1.00	156		X			X						4A/G3/1.0, 4A/G9/1.0, 4A/G6/1.0	X				X																	
4A/C4	0.25	157		X			X						4A/G2/0.25, 4A/G7/0.25, 4A/G10/0.25	X																					
4A/C5	0.50	158		X			X						4A/G2/0.5, 4A/G7/0.5, 4A/G10/0.5	X																					
4A/C6	1.00	159		X			X						4A/G2/1.0, 4A/G7/1.0, 4A/G10/1.0																						X
4A/C7	0.25	160		X			X						4A/G8/0.25, 4A/G12/0.25, 4A/G13/0.25	X				X																	
4A/C8	0.50	161		X			X						4A/G8/0.5, 4A/G12/0.5, 4A/G13/0.5	X																					
4A/C9	1.00	162		X			X						4A/G8/1.0, 4A/G12/1.0, 4A/G13/1.0	X				X			X						X								
4A/C10	0.25	163		X			X						4A/G14/0.25, 4A/G15/0.25, 4A/G18/0.25	X																					
4A/C11	0.50	164		X			X						4A/G14/0.5, 4A/G15/0.5, 4A/G18/0.5	X				X																	
4A/C12	1.00	165		X			X						4A/G14/1.0, 4A/G15/1.0, 4A/G18/1.0																						X
4A/C13	0.25	166		X			X						4A/G17/0.25, 4A/G19/0.25, 4A/G20/0.25	X				X																	
4A/C14	0.50	167		X			X						4A/G17/0.5, 4A/G19/0.5, 4A/G20/0.5	X							X						X								
4A/C15	1.00	168		X			X						4A/G17/1.0, 4A/G19/1.0, 4A/G20/1.0	X				X																	
4A/C16	0.25	169		X			X						4A/G22/0.25, 4A/G24/0.25, 4A/G25/0.25	X																					
4A/C17	0.50	170		X			X						4A/G22/0.5, 4A/G24/0.5, 4A/G25/0.5	X																					
4A/C18	1.00	171		X			X						4A/G22/1.0, 4A/G24/1.0, 4A/G25/1.0					X																	
4A/C19	0.25	172		X			X						4A/G27/0.25, 4A/G29/0.25, 4A/G30/0.25	X				X																	
4A/C20	0.50	173		X			X						4A/G27/0.5, 4A/G29/0.5, 4A/G30/0.5	X																					
4A/C21	1.00	174		X			X						4A/G27/1.0, 4A/G29/1.0, 4A/G30/1.0	X																					
4A/C22	0.25	175		X			X						4A/G31/0.25, 4A/G34/0.25, 4A/G35/0.25	X							X						X								
4A/C23	0.50	176		X			X						4A/G31/0.5, 4A/G34/0.5, 4A/G35/0.5	X				X																	
4A/C24	1.00	177		X			X						4A/G31/1.0, 4A/G34/1.0, 4A/G35/1.0					X																	
4A/C25	0.25	178		X			X						4A/G32/0.25, 4A/G36/0.25, 4A/G37/0.25	X																					
4A/C26	0.50	179		X			X						4A/G32/0.5, 4A/G36/0.5, 4A/G37/0.5	X																					
4A/C27	1.00	180		X			X						4A/G32/1.0, 4A/G36/1.0, 4A/G37/1.0	X							X						X								
This Page				27			27						27	23				12			6					6									27

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by:	Date	Time	Received by:	Date	Time	
Emily Burke	14/4/08			14/4/08		Custody Seals Intact?
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?

Additional Comments:
* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
Unit 6, 2 Sarton Road, Clayton
Tim Kilmister
95384444

PROJECT # 3106004
PROJECT NAME: Werribee Sub-Area 4
COLLECTORS NAME: Emily Burke eburke@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL
FINAL REPORT BY: Email to: lsantwyk-anderson@otek.com.au
LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189
REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	COMPOSITE SAMPLE FROM SAMPLES	METALS (see below*)	BTEX & TPH (C6-C9)	TPH (C10-C36)	Pb	PAH	OCP/OPP/PCBs	OCP/PCBs	OCP/OPP	OPP	CYNIDE & FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	VIC EPA SCREEN	VOH	ON HOLD
														Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std
4A/C28	0.25	187		X			X						4A/G38/0.25, 4A/G39/0.25, 4A/G44/0.25	X				X			X					X										
4A/C29	0.50	188		X			X						4A/G38/0.5, 4A/G39/0.5, 4A/G44/0.5	X				X																	
4A/C30	1.00	189		X			X						4A/G28/1.0, 4A/G39/1.0, 4A/G44/1.0	X				X			X														
4A/C31	0.25	194		X			X						4A/G41/0.25, 4A/G42/0.25, 4A/G46/0.25	X													X								
4A/32	0.50	193		X			X						4A/G41/0.5, 4A/G42/0.5, 4A/G46/0.5	X																					
4A/33	1.00	186		X			X						4A/G41/1.0, 4A/G42/1.0, 4A/G46/1.0																						X
4A/34	0.25	185		X			X						4A/G43/0.25, 4A/G47/0.25, 4A/G48/0.25	X				X																	
4A/35	0.50	184		X			X						4A/G43/0.5, 4A/G47/0.5, 4A/G48/0.5	X				X																	
4A/36	1.00	183		X			X						4A/G43/1.0, 4A/G47/1.0, 4A/G48/1.0	X				X																	
4A/37	0.25	196		X			X						4A/G45/0.25, 4A/G50/0.25, 4A/G52/0.25	X																					
4A/C38	0.50	191		X			X						4A/G45/0.5, 4A/G50/0.5, 4A/G52/0.5	X							X						X								
4A/C39	1.00	190		X			X						4A/G45/1.0, 4A/G50/1.0, 4A/G52/1.0																						X
4A/C40	0.25	193		X			X						4A/G53/0.25, 4A/G54/0.25, 4A/G60/0.25	X				X																	
4A/C41	0.50	192		X			X						4A/G53/0.5, 4A/G54/0.5, 4A/G60/0.5	X				X																	
4A/C42	1.00	173		X			X						4A/G53/1.0, 4A/G54/1.0, 4A/G60/1.0	X				X			X						X								
4A/C43	0.25	176		X			X						4A/G55/0.25, 4A/G61/0.25, 4A/G62/0.25	X							X						X								
4A/C44	0.50	174		X			X						4A/G55/0.5, 4A/G61/0.5, 4A/G62/0.5	X																					
4A/C45	1.00	195		X			X						4A/G55/1.0, 4A/G61/1.0, 4A/G62/1.0																						X
4A/C46	0.25	199		X			X	}					4A/G56/0.25, 4A/G57/0.25, 4A/G58/0.25	X				X																	
4A/C47	0.50	200		X			X						4A/G56/0.5, 4A/G57/0.5, 4A/G58/0.5	X				X			X						X								
4A/C48	1.00	201		X			X						4A/G56/1.0, 4A/G57/1.0, 4A/G58/1.0	X				X																	
This Page				20			20						20	17				11			5					5									21

ANALYSIS REQUIRED

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

PQLs Required (ug/L)

Relinquished by:	Date	Time	Received by:	Date	Time
Emily Burke	14/4/08			14/4/08	
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact?
Samples Received Chilled?

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P10 of 15

EM-8802745

Page 1 of 1

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Tim Kilmister
8549 9600

PROJECT # 3106004

PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Emily Burke
eburke@otek.com.au

LAB JOB #

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LAB QUOTE REF: ME/055/08

OTEK PO No.: 21189

REMARKS

PQLs Required (ug/L)

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	BTEX & TPH (C6-C9) Std	TPH (C6-C36) Std	Pb Std	PAH Std	PHENOLS Std	PCBs Std	OCP/OPP Std	OPP Std	CYNIDE & SOLUBLE FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	ETHYLENE GLYCOL Std	PHOSPHOROUS Std	RADIUM Std	SULPHATE Std	TRITIUM Std	VIC EPA SCREEN Std	VOH Std	ON HOLD
4A/ G19 /0.25	0.25			X			X					1													X														
4A/ G19 /0.5	0.50			X			X					1																											X
4A/ G19 /1.0	1.00			X			X					1																											X
4A/ G20 /0.25	0.25			X			X					1																											X
4A/ G20 /0.5	0.50			X			X					1																											X
4A/ G20 /1.0	1.00			X			X					1																											X
4A/ G21 /0.25	0.25			X			X					1		X		X		X			X					X													
4A/ G21 /0.5	0.50			X			X					1		X		X		X			X					X													
4A/ G21 /1.0	1.00			X			X					1		X		X		X			X																		
4A/ G22 /0.25	0.25			X			X					1																											X
4A/ G22 /0.5	0.50			X			X					1																											X
4A/ G22 /1.0	1.00			X			X					1																											X
4A/ G23 /0.25	0.25			X			X					1		X		X		X			X					X	X												
4A/ G23 /0.5	0.50			X			X					1		X		X		X			X						X												
4A/ G23 /1.0	1.00			X			X					1				X		X			X						X												
4A/ G24 /0.25	0.25			X			X				15/4	1																											X
4A/ G24 /0.5	0.50			X			X					1																											X
4A/ G24 /1.0	1.00			X			X					1																											X
4A/ G25 /0.25	0.25			X			X					1																											X
4A/ G25 /0.5	0.50			X			X					1																											X
4A/ G25 /1.0	1.00			X			X					1																											X
4A/ G26 /0.25	0.25			X			X					1		X		X		X			X					X	X												
4A/ G26 /0.5	0.50			X			X					1		X		X		X			X						X												
4A/ G26 /1.0	1.00			X			X					1				X		X			X																		
4A/ G27 /0.25	0.25			X			X				16/4	1																											X
4A/ G27 /0.5	0.50			X			X					1																											X
4A/ G27 /1.0	1.00			X			X					1																											X
This Page				27			27							7		9		9			9					3	7												

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

	Date	Time		Date	Time
Relinquished by:	16/4/08		Received by:		
Relinquished by:			Received by: DANIEL	16/4	2pm

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

17M +V

3 Rshy.-

P11 of 15

CHAIN OF CUSTODY & ANALYSIS REQUEST

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

ALS
4 Westall Rd, Springvale
Tim Kilmister
8549 9600

PROJECT #: 3106004
PROJECT NAME: Werribee Area 4
COLLECTORS NAME: Emily Burke
eburke@otek.com.au
LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189

REMARKS

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*)	BTEX & TPH (C6-C9)	TPH (C6-C36)	Pb	PAH	PHENOLS	PCBs	OCP/OPP	OPP	CYNIDE & SOLUBLE FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	ETHYLENE GLYCOL	PHOSPHOROUS	RADIUM	SULPHATE	TRITIUM	Vic EPA SCREEN	VCH	ON HOLD
														Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	PQLs Required (ug/L)
4A/ G28 /0.25	0.25	211		X			X					1		X		X		X			X					X														
4A/ G28 /0.5	0.50	212		X			X					1		X		X		X			X					X														
4A/ G28 /1.0	1.00	213		X			X					1		X		X		X			X																		
4A/ G29 /0.25	0.25	214		X			X					1													X														
4A/ G29 /0.5	0.50	215		X			X					1																										X
4A/ G29 /1.0	1.00	216		X			X					1																										X
4A/ G30 /0.25	0.25	217		X			X					1																										X
4A/ G30 /0.5	0.50	218		X			X					1																										X
4A/ G30 /1.0	1.00	219		X			X					1																										X
4A/ G31 /0.25	0.25	220		X			X					1													X													
4A/ G31 /0.5	0.50	221		X			X					1																										X
4A/ G31 /1.0	1.00	222		X			X					1																										X
4A/ G32 /0.25	0.25	223		X			X					1																										X
4A/ G32 /0.5	0.50	224		X			X					1																										X
4A/ G32 /1.0	1.00	225		X			X					1																										X
4A/ G33 /0.25	0.25	226		X			X					1		X		X		X			X					X	X												
4A/ G33 /0.5	0.50	227		X			X					1		X		X		X			X						X												
4A/ G33 /1.0	1.00	228		X			X					1				X		X			X						X												
4A/ G34 /0.25	0.25	229		X			X					1																										X
4A/ G34 /0.5	0.50	230		X			X					1																										X
4A/ G34 /1.0	1.00	231		X			X					1																										X
4A/ G35 /0.25	0.25	232		X			X					1																										X
4A/ G35 /0.5	0.50	233		X			X					1																										X
4A/ G35 /1.0	1.00	234		X			X					1																										X
4A/ G36 /0.25	0.25	235		X			X					1													X													
4A/ G36 /0.5	0.50	236		X			X					1																										X
4A/ G36 /1.0	1.00	237		X			X					1																										X
This Page				27			27							5		6		6			6					4	5												

Relinquished by: [signature] Date: 16/4/08 Time: Received by: Date: Time:

Relinquished by: Date: Time: Received by: Date: Time:

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals Include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

17M + V

P12 of 15

CHAIN OF CUSTODY & ANALYSIS REQUEST

OTEK AUSTRALIA PTY LTD
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ALS
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Tim Kilmister
8549 9600

PROJECT # 3106004
PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Emily Burke
eburke@otek.com.au

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACID/FRED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: METALS (see below*) Std	BTEX & TPH (C6-C9) Std	TPH (C6-C36) Std	Pb Std	PAH Std	PHENOLS Std	PCBs Std	OCP/OPP Std	OPP Std	CYNIDE & SOLUBLE FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	ETHYLENE GLYCOL Std	PHOSPHOROUS Std	RADIUM Std	SULPHATE Std	TRITIUM Std	VIC EPA SCREEN Std	VOH Std	ON HOLD
4A/ G37 /0.25	0.25	238		X			X				8-Apr-08	1													X													
4A/ G37 /0.5	0.50	239		X			X				8-Apr-08	1																											X
4A/ G37 /1.0	1.00	240		X			X				8-Apr-08	1																											X
4A/ G38 /0.25	0.25	241		X			X				14 April	1																											X
4A/ G38 /0.5	0.50	242		X			X				"	1																											X
4A/ G38 /1.0	1.00	243		X			X				"	1																											X
4A/ G39 /0.25	0.25	244		X			X				"	1																											X
4A/ G39 /0.5	0.50	245		X			X				"	1																											X
4A/ G39 /1.0	1.00	246		X			X				14 April	1																											X
4A/ G40 /0.25	0.25			X			X				8-Apr-08	1		X		X		X			X				X	X													
4A/ G40 /0.5	0.50			X			X				8-Apr-08	1		X		X		X							X	X													
4A/ G40 /1.0	1.00			X			X				8-Apr-08	1		X		X		X							X														
4A/ G40 /0.1	0.10			X			X				8-Apr-08	1		X				X																						
4A/ G41 /0.25	0.25			X			X				8-Apr-08	1																											X
4A/ G41 /0.5	0.50			X			X				8-Apr-08	1																											X
4A/ G41 /1.0	1.00			X			X				8-Apr-08	1																											X
4A/ G42 /0.25	0.25			X			X				8-Apr-08	1													X														
4A/ G42 /0.5	0.50			X			X				8-Apr-08	1																											X
4A/ G42 /1.0	1.00			X			X				8-Apr-08	1																											X
4A/ G43 /0.25	0.25			X			X				8-Apr-08	1																											X
4A/ G43 /0.5	0.50			X			X				8-Apr-08	1																											X
4A/ G43 /1.0	1.00			X			X				8-Apr-08	1																											X
4A/ G44 /0.25	0.25			X			X				8-Apr-08	1													X														
4A/ G44 /0.5	0.50			X			X				8-Apr-08	1																											X
4A/ G44 /1.0	1.00			X			X				8-Apr-08	1																											X
4A/ G45 /0.25	0.25			X			X					1																											X
4A/ G45 /0.5	0.50			X			X					1																											X
4A/ G45 /1.0	1.00			X			X					1																											X
This Page				28			28					28		4		3		4			1				6	2													

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

PQLs Required (ug/L)

Relinquished by:	Date	Time	Received by:	Date	Time
[signature]	14/4/08				
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

p13 of 15

OTEK AUSTRALIA PTY LTD
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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd, Springvale
Tim Kilmister
8549 9600

PROJECT # 3106004
PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Emily Burke
eburke@otek.com.au

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189

REMARKS

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*)	BTEX & TPH (C6-C9)	TPH (C16-C36)	Pb	PAH	PHENOLS	PCBs	OCP/OPP	OPP	CYANIDE & SOLUBLE FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	ETHYLENE GLYCOL	PHOSPHOROUS	RADIUM	SULPHATE	TRITIUM	VIC EPA SCREEN	VCH	ON HOLD
														Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	PQLs Required (ug/L)
4A/ G55 /0.25	0.25			X			X				8-Apr-08	1																												X
4A/ G55 /0.5	0.50			X			X				8-Apr-08	1																													X
4A/ G55 /1.0	1.00			X			X				8-Apr-08	1																													X
4A/ G56 /0.25	0.25	244		X			X				15 Apr	1																													X
4A/ G56 /0.5	0.50	245		X			X					1																													X
4A/ G56 /1.0	1.00	246		X			X					1																													X
4A/ G57 /0.25	0.25	250		X			X					1													X																
4A/ G57 /0.5	0.50	251		X			X					1																													X
4A/ G57 /1.0	1.00	252		X			X					1																													X
4A/ G58 /0.25	0.25	253		X			X					1																													X
4A/ G58 /0.5	0.50	254		X			X					1																													X
4A/ G58 /1.0	1.00	255		X			X					1																													X
4A/ G59 /0.25	0.25			X			X				11-Apr-08	1		X		X		X			X				X	X														
4A/ G59 /0.5	0.50			X			X				11-Apr-08	1		X		X		X			X					X														
4A/ G59 /1.0	1.00			X			X				11-Apr-08	1		X		X		X			X					X														
4A/ G60 /0.25	0.25			X			X				11-Apr-08	1																													X
4A/ G60 /0.5	0.50			X			X				11-Apr-08	1																													X
4A/ G60 /1.0	1.00			X			X				11-Apr-08	1																													X
4A/ G61 /0.25	0.25			X			X				11-Apr-08	1																													X
4A/ G61 /0.5	0.50			X			X				11-Apr-08	1																													X
4A/ G61 /1.0	1.00			X			X				11-Apr-08	1																													X
4A/ G62 /0.25	0.25			X			X				11-Apr-08	1													X															
4A/ G62 /0.5	0.50			X			X				11-Apr-08	1																													X
4A/ G62 /1.0	1.00			X			X				11-Apr-08	1																													X
This Page				24			24					24		3		3		3			3				3	3														

Relinquished by: [signature] Date 16/4/08 Time
Received by: Date Time

Relinquished by: Date Time
Received by: Date Time

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

p14 of 15

CHAIN OF CUSTODY & ANALYSIS REQUEST

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95384444

PROJECT # 3106004
PROJECT NAME: Werribee Area 4
COLLECTORS NAME: Emily burke
eburke@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21189

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	BTEX Std	TPH (C6-C36) Std	Pb Std	PAH Std	TPH (C10-C36) Std	PHENOLS Std	OCP/OPP Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VOH Std	ON HOLD
4A/QS-1	-			X			X				10-Apr-08	1		X																				
4A/QS-2	-			X			X					2		X	X	X	X																	
4A/QS-3	-	255		X			X				10-Apr-08	1		X		X		X																
4A/QS-4	-			X			X				9-Apr-08	1									X													
4A/QS-5	-			X			X				10-Apr-08	1		X		X		X																
4A/QS-6	-			X			X					1																						X
4A/QS-7	-	257		X			X					1																						X
4A/QS-8	-	X		X			X					1																						X
4A/QS-9	-	258		X			X					1																						X
4A/QS-10	-			X			X					2																						X
4A/QS-11	-			X			X				11-Apr-08	1																						X
4A/TB-1	-	146	X				X				7-Apr-08	1							X															
4A/RB-1	-	147	X				X				7-Apr-08	1							X															
4A/TB-2	-	148	X				X				8-Apr-08	1	X	X																					
4A/RB-2	-	149	X				X				8-Apr-08	1	X	X																					
4A/TB-3	-	150	X				X				9-Apr-08	1						X																
4A/RB-3	-	151	X				X				9-Apr-08	1						X																
4A/TB-4	-	152	X				X				10-Apr-08	1							X															
4A/RB-4	-	153	X				X				10-Apr-08	1							X															
4A/RB6		259	X				X				14/4/08	1							X															
4A/RB7		260	X				X				15/4/08	1	X	X																				
4A/RB8		261	X								11/4			X																				
This Page				11			19					19	2	4	1	3	1	4	4		1													11

ANALYSIS REQUIRED

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

PQLs Required (ug/L)

Relinquished by:	Date	Time	Received by:	Date	Time	Custody Seals Intact?
	16.4.08					
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

Ranil Weerakkody

From: Ranil Weerakkody
Sent: Tuesday, 15 April 2008 10:19 AM
To: 'tsantwyk-anderson@otek.com.au'
Subject: SAMPLES NOT RECEIVED

Hi! Tom,

This refers to our discussion today. I have crossed of the following samples from the COC as they were not on the correct bottles.

4A/TB-1, 4A/RB-1, 4A/TB – 3, 4A/RB – 3, 4A/TB- 4, 4A/RB-4.

Please re-sample them on Amber Glass bottles.

Also the following samples are missing. (I have spoken to Emily regarding this)

4A/G-37/0.25, 4A/G-37/0.5, 4A/G37/1.0, 4A/QS-1, 4A/QS-2, 4A/QS-3, 4A/QS-7, 4A/QS-9.

Thanks

Ranil

Sample Receipt
ALS MELBOURNE

Ranil Weerakkody

From: Ranil Weerakkody
Sent: Thursday, 17 April 2008 2:06 PM
To: 'tsantwyk-anderson@otek.com.au'
Subject: OUR BATCH NO. EM0802745

Hi! Tom,

As per our discussion this morning the following changes will be done to the COC. Our batch no. is EM 0802745.

1. For samples, 4A/T4/0.25, 4A/T4/1.0 all analysis cancelled.
2. For the extra sample 4A/RB-5 analysis added (METALS)

The samples 4A/QS-1, 4A/QS-2 is still missing.

Thanks

Ranil

From: Sarah Hodgson
To: Catherine Crilly
Subject: RE: RPD error
Date: Thursday, 10 March 2011 5:01:57 PM

Hi Catherine,

Our LIMS department have looked at this query, and I've informed me that the reported RPD values are correct. There are 2 reasons for this.

The first is that the RPD values presented in the report are calculated from the raw data, not the rounded data included in the reports. This is applicable to the samples where you have queried a result that is not 0.0%, but an actual number. If you would like, I can find the raw data for you to present the calculations?

The second, where you have queried RPD values of 0.0%, this is a product of the rule used to validate the RPD data. In work order EM0802745, on page 3 of the QC report, the following statement is written:

"The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates … are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit".

During the QC process, the system looks at the highest value of either the Duplicate and the Primary sample, and if the result is lower than 10 times the LOR then it does not calculate an RPD. For example, sample #001 from EM0802745 – the Arsenic results were 5mg/kg for the Primary and 6mg/kg for the DUP. Since the LOR is 5mg/kg, and the highest concentration of Arsenic in these samples is below 10 times the LOR (in this case below 50mg/kg) no RPD has been calculated.

Each analysis (and element) has a different LOR, so you will need to check the sample concentrations against the LOR for that compound.

Please let me know if this makes sense, or if you need me to better explain it.

Thanks Catherine,

Regards,

How was your customer experience? Please send us your feedback

Sarah Hodgson

PROJECT MANAGER

ALS | Environmental (General Environmental Group)

Address
4 Westall Road
Springvale VIC 3171

PHONE +61 3 8549 9600
FAX +61 3 8549 9601

www.alsglobal.com

From: Catherine Crilly [mailto:CCrilly@otek.com.au]
Sent: Tuesday, 8 March 2011 12:45 PM
To: Sarah Hodgson
Subject: RPD error

Hi Sarah, below is a table of errors our auditor has found.

EM0802745, EM0803020 and EM0802914. In addition to the miscalculations there have been several cases where there are RPDs calculated as 0.0%, when the primary and duplicate result have not been identical? The following list is an example of the RPDs checked (this is not an inclusive list of errors encountered):

Report No.	Page # in Report	Analyte	Primary Result (mg/kg)	Duplicate Result (mg/kg)	RPD in lab report	RPD check
EM0802745	80 of 163	Cobalt	9	10	14.2%	10.5

		Arsenic	5	6	0.0%	18.2
	81 of 163	zinc	27	28	0.0%	3.6
		Cobalt	13	12	0.0%	8.0
		Manganese	316	299	5.5%	5.5
		Barium	60	70	0.0%	15.4
	82 of 163	Chromium	30	29	3.8%	3.4
		Cobalt	9	8	0.0%	11.8
	83of 163	Lead	10	12	21.9%	18.2
	84 of 163	Vanadium	60	48	21.6%	22.2
	85 of 163	Vanadium	39	38	0.0%	2.6
	86 of 163	Fluoride	400	410	3.7%	2.5
EM0802914	9 of 24	Manganese	13	22	49.9%	51.4
		Vanadium	25	24	4.4%	4.1
	10 of 24	Cobalt	10	11	0.0%	9.5
		Vanadium	32	33	0.0%	3.1
		Manganese	523	531	1.5%	1.5
EM0803020	39 of 50	Chromium	24	25	4.9%	4.1
		Chromium	35	36	0.0%	2.8
		Arsenic	8	9	14.9%	11.8
		Arsenic	6	7	0.0%	15.4
	40 of 50	Arsenic	81	64	24.1%	23.4
		Arsenic	15	16	0.0%	6.5

Kind regards,

Catherine Crilly - Casual Environmental Scientist

Practical Environmental Solutions

T: 03 9095 1943 (Direct) **T:** 03 9525 5155 (Switch) **F:** 03 9593 8555

E: ccrilly@otek.com.au **W:** www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

From: Catherine Crilly
To: "Sarah Hodgson"
Subject: RE: ID change? EM0802745
Date: Tuesday, 8 March 2011 3:40:00 PM
Attachments: image001.jpg

Thanks Sarah,

Can we please have sample ID 4A/G40/0.1 (EM0802745-078) changed to read 4A/G41/0.1
Thanks in advance.

Kind regards,

Catherine Crilly - Casual Environmental Scientist

T: 03 9095 1943 (Direct) T: 03 9525 5155 (Switch) F: 03 9593 8555

E: ccrilly@otek.com.au W: www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

From: Sarah Hodgson [mailto:Sarah.Hodgson@alsglobal.com]
Sent: Tuesday, 8 March 2011 3:22 PM
To: Catherine Crilly
Subject: ID change?

Hi Catherine,

Shirley also mentioned that you require an ID amendment to be made for one of your samples? If you still require this, please let me know and I will make the amendment for you.

Thanks Catherine,

Regards,

How was your customer experience? Please send us your feedback

Sarah Hodgson

PROJECT MANAGER

ALS | Environmental (General Environmental Group)

Address
4 Westall Road
Springvale VIC 3171

PHONE +61 3 8549 9600
FAX +61 3 8549 9601

www.alsglobal.com

From: Sarah Hodgson
To: Catherine Crilly
Subject: RE: EM0802745
Date: Tuesday, 12 April 2011 5:01:29 PM
Attachments: EM0802745-1.TIF

Hi Catherine,

The only paperwork I can find saved electronically is the COC we made to send to ASET.

The only information I have regarding those 7 samples is the following info on the IDs:

Sample	EM0802745205	EM0802745214	EM0802745220	EM0802745226	EM0802745235	EM0802745238	EM0802745250
Client No	4A/G26/0.25	4A/G29/0.25	4A/G31/0.25	4A/G33/0.25	4A/G36/0.25	4A/G37/0.25	4A/G57/0.25

We don't have a copy of the COC which includes these samples saved electronically, but I can get a copy of the original COC from storage. This might take a few days as the storage is off site. Will this be ok?

Regards,

How was your customer experience? Please send us your feedback

Sarah Hodgson

PROJECT MANAGER

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4 Westall Road
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PHONE +61 3 8549 9600
FAX +61 3 8549 9601

www.alsglobal.com

From: Catherine Crilly [mailto:CCrilly@otek.com.au]
Sent: Tuesday, 12 April 2011 9:29 AM
To: Sarah Hodgson
Subject: EM0802745

Good Morning Sarah,

I am having difficulty finding the final page to a COC we sent a few years back, job no. EM0802745. The sheet that I am missing should have EM0802745-214, 220, 226, 235, 238 & 250 lab sample IDs. Most of these samples were only tested for Asbestos so were sent to ASET via ALS. I have the ASET results but I need to verify the ALS sample numbers with the ASET sample numbers. Please send my the complete COC that you have and any correspondence with ASET.
Thanks for your assistance.

Kind regards,

Catherine Crilly - Environmental Scientist

Practical Environmental Solutions

T: 03 9095 1943 (Direct) **T:** 03 9525 5155 (Switch) **F:** 03 9593 8555

E: ccrilly@otek.com.au **W:** www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

From: Sarah Hodgson
To: Catherine Crilly
Subject: RE: Matrix Spike recoveries for EM0802745
Date: Thursday, 5 May 2011 11:54:47 AM

Hi Catherine,

I've had another look at your query and I think the answer is that the concentrations of Barium, Lead and Zinc in the sample EM0802897-001 were so high that the spike concentration could not be identified in the sample (ie the spike concentration is less than the background concentration in the sample). The note that is in the CQ report is "MS recovery not determined, background level greater than or equal to 4x spike level". The Outliers report only lists analytes that are flagged as breaching QC limits.

Mercury is analysed via a different method to the other metals and so appears separately to the other metals in the report. The Hg is done via method code Total Mercury by FIMS EG035T, where all the other metals are listed under method code Total Metals by ICP-AES EG005T. Both of these methods appear in the QC report, but it was only the Ba, Pb and Zn that we could not report a matrix recovery for this sample.

On page 40 of the QC report, it shows all the results of the metals Matrix spike recoveries. Mercury is under EG035T Total Hg, and the other metals are under EG005T Total Metals.

Does this answer your question?

Regards,

How was your customer experience? Please send us your feedback

Sarah Hodgson

PROJECT MANAGER

ALS | Environmental (General Environmental Group)

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4 Westall Road
Springvale VIC 3171

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FAX +61 3 8549 9601

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From: Catherine Crilly [mailto:CCrilly@otek.com.au]
Sent: Wednesday, 4 May 2011 4:38 PM
To: Sarah Hodgson
Subject: Matrix Spike recoveries for EM0802745

Good Afternoon Sarah,

I have a query about matrix spike recoveries for a job.

EM0802745: The matrix spike outlier summary includes three results that have not actually been tested for matrix spike recoveries (Sample ID EM0802897-001 – Anonymous: matrix spike recoveries reported as not determined for Barium, Lead and Zn). The only metal analyte that appears in the matrix spike recovery testing for this sample ID is Mercury. Please clarify.

Kind regards,

Catherine Crilly - Environmental Scientist

Practical Environmental Solutions

T: 03 9095 1943 (Direct) **T:** 03 9525 5155 (Switch) **F:** 03 9593 8555

M: 0408 704 198 **E:** ccrilly@otek.com.au **W:** www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

PLEASE CONSIDER THE ENVIRONMENT BEFORE YOU PRINT THIS E-MAIL!

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Project Number: 3106004

Address: New Farm Road Werribee

Validation Conducted by: KJB

Signed & Dated: 18/05/2010

Primary Laboratory: ALS

Batch Number: EM0802914

Secondary Laboratory: N/A

Batch Number: N/A

Sample Matrix: (Shade)

Soil

Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
4	0	0	0

Have the Following Criteria Been Met? (Shade)

				Explain any Discrepancies:
Blind Replicate	**OK if >5%**	0	**NOT OK if <5%**	Qualities in other batch
Split Sample	**OK if >5%**	0	**NOT OK if <5%**	Qualities in other batch
Blank Samples	**OK**	0	**NOT OK**	Blanks in other batch

0 Rinsate
0 Field
0 Trip

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	Number obtained		
	Sample Identification		
	Total Number of Analytes		
A	**No. of analytes with RPD >50% (Fail)**		**B**
	Number of analytes <50% (Pass)		
	% Pass		

Explain any Discrepancies:

QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number			
Sample Identifictaion			
Number of Analytes			
No. Analytes >PQL **(FAIL)**			
% Pass			
	C	**D**	**E**

Explain any Discrepancies:

Field blank sampling has been undertaken based on overall batch size and volume for Sub Area 4, rather than individual analytical reports.

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Validation Conducted by: KJB

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	5	0
	No. Fails	0	0
Analysis	**No. Passes**	8	0
	No. Fails	0	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	**F**	**G**
	Primary	**Secondary**
TOTAL # Analytes of DUP Samples	78	
# samples RPD >50% **(FAIL)**	0	
% Pass	100	

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Method Blank Analysis (MB)	**H**	**I**
	Primary	**Secondary**
TOTAL # Analytes	39	
# Analytes with RPD >PQL **(FAIL)**	0	
% Pass	100	

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery	**J**	**K**
(LCS, LS)	**Primary**	**Secondary**
TOTAL # Analytes	21	
# Analytes outside range i.e <70% or >130% **(FAIL)**	0	
% Pass	100	

Surrogates

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	**L**	**M**
	Primary	**Secondary**
TOTAL # Analytes	31	
# Analytes outside range i.e <70% or >130%	2	
% Pass	94	

Internal Spikes

OK (>95%)	93.5
NOT OK (<95%)	

Explanation for Failures:

Metal analysis for anonymous samples fell outside the acceptable Matrix Spike range for Chromium and Manganese.

FINAL DATA

A	**Primary Duplicates**	0	0	-
B	**Secondary Duplicates**	0	0	-
C	**Trip Blanks**	0	0	-
D	**Field Blanks**	0	0	-
E	**Rinsate Blanks**	0	0	-
F & G	**Lab Internal Duplicates**	0	78	100.0
H & I	**Lab Method Blanks**	0	39	100.0
J & K	**Lab Internal Spike Recoveries**	0	21	100.0
L & M	**Laboratory Spike Recoveries**	2	31	93.5
	Total	**2**	**169**	**98.8**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) CHRISTIAN BEASLEY
SIGNATURE C.Beasley
DATE 13/10/08

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0802914**	Page	: 1 of 3
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MS EMILY BURKE	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: eburke@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 20091		
C-O-C number	: ----	Date Samples Received	: 17-APR-2008
Sampler	: EB	Issue Date	: 28-APR-2008
Site	: ----		
		No. of samples received	: 4
Quote number	: ----	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Herman Lin	Senior Inorganic Chemist	Inorganics
Kelly Ding	Senior Microbiologist	Microbiology

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **ALS is not NATA accredited for the analysis of E.coli in soil matrix. All QC passed for the analysis of E.coli.**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/T5/0.25	4A/T5/0.5	4A/T5/1.0	4A/T5/2.0	----
				Client sampling date / time: 17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	----
				EM0802914-001	EM0802914-002	EM0802914-003	EM0802914-004	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**8.7**	----	**8.4**	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**6.1**	**12.2**	**4.7**	**9.5**	----
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	<5	----	----
Arsenic	7440-38-2	5	mg/kg	**6**	----	**6**	----	----
Barium	7440-39-3	10	mg/kg	**70**	----	**140**	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	<1	----	----
Boron	7440-42-8	50	mg/kg	<50	----	<50	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	----	----
Chromium	7440-47-3	2	mg/kg	**27**	----	**27**	----	----
Cobalt	7440-48-4	2	mg/kg	**11**	----	**10**	----	----
Copper	7440-50-8	5	mg/kg	**16**	----	**14**	----	----
Lead	7439-92-1	5	mg/kg	**16**	----	**8**	----	----
Manganese	7439-96-5	5	mg/kg	**328**	----	**211**	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	<2	----	----
Nickel	7440-02-0	2	mg/kg	**24**	----	**29**	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	<5	----	----
Tin	7440-31-5	5	mg/kg	<5	----	<5	----	----
Vanadium	7440-62-2	5	mg/kg	**33**	----	**32**	----	----
Zinc	7440-66-6	5	mg/kg	**54**	----	**37**	----	----
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	----	----
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	<20	<20	<20	<20	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N (Sol.)	----	0.100	mg/kg	**0.287**	**0.153**	**0.406**	**0.165**	----
EK058G: Nitrate as N by Discrete Analyser								
^ Nitrate as N (Sol.)	----	0.100	mg/kg	**1.05**	<0.100	**0.367**	**0.136**	----
EK059G: NOX as N by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.100	mg/kg	**1.33**	**0.158**	**0.773**	**0.302**	----
MW008: Faecal Coliforms & E.coli by MPN								
Escherichia coli	----	-	MPN/g	<2	<2	<2	<2	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0802914**	Page	: 1 of 5
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MS EMILY BURKE	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: eburke@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 17-APR-2008
Sampler	: EB	Issue Date	: 28-APR-2008
Order number	: 20091		
		No. of samples received	: 4
Quote number	: ----	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils)								
Soil Glass Jar - Unpreserved								
4A/T5/0.25,	4A/T5/1.0	**17-APR-2008**	**24-APR-2008**	14-OCT-2008	✓	**24-APR-2008**	24-APR-2008	✓
EA055: Moisture Content								
Soil Glass Jar - Unpreserved								
4A/T5/0.25,	4A/T5/0.5,	**17-APR-2008**	**----**	----	----	**21-APR-2008**	24-APR-2008	✓
4A/T5/1.0,	4A/T5/2.0							
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved								
4A/T5/0.25,	4A/T5/1.0	**17-APR-2008**	**22-APR-2008**	14-OCT-2008	✓	**23-APR-2008**	14-OCT-2008	✓
EG035T: Total Mercury by FIMS								
Soil Glass Jar - Unpreserved								
4A/T5/0.25,	4A/T5/1.0	**17-APR-2008**	**22-APR-2008**	14-OCT-2008	✓	**28-APR-2008**	15-MAY-2008	✓
EK055: Ammonia as N								
Soil Glass Jar - Unpreserved								
4A/T5/0.25,	4A/T5/0.5,	**17-APR-2008**	**----**	----	----	**28-APR-2008**	14-OCT-2008	✓
4A/T5/1.0,	4A/T5/2.0							
EK057G: Nitrite as N by Discrete Analyser								
Soil Glass Jar - Unpreserved								
4A/T5/0.25,	4A/T5/0.5,	**17-APR-2008**	**24-APR-2008**	14-OCT-2008	✓	**24-APR-2008**	14-OCT-2008	✓
4A/T5/1.0,	4A/T5/2.0							
EK059G: NOX as N by Discrete Analyser								
Soil Glass Jar - Unpreserved								
4A/T5/0.25,	4A/T5/0.5,	**17-APR-2008**	**24-APR-2008**	14-OCT-2008	✓	**24-APR-2008**	14-OCT-2008	✓
4A/T5/1.0,	4A/T5/2.0							
MW008: Faecal Coliforms & E.coli by MPN								
Sterile Plastic Jar								
4A/T5/0.25,	4A/T5/0.5,	**17-APR-2008**	**----**	----	----	**18-APR-2008**	18-APR-2008	✓
4A/T5/1.0,	4A/T5/2.0							

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Buchi Ammonia	EK055	1	4	**25.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Moisture Content	EA055-103	2	19	**10.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	4	**25.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	4	**25.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	1	7	**14.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	4	37	**10.8**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	40	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Buchi Ammonia	EK055	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	37	**5.4**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Buchi Ammonia	EK055	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	37	**5.4**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Buchi Ammonia	EK055	1	4	**25.0**	**5.0**	✓	ALS QCS3 requirement
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	4	**25.0**	**5.0**	✓	ALS QCS3 requirement
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	4	**25.0**	**5.0**	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	37	**5.4**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	**5.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Asbestos - Count (Solid)	ASB-SOL	SOIL	Asbestos Count on solid matrices using PLM conducted by Subcontracting Laboratory
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (1999) Schedule B(3) (Method 103)
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Buchi Ammonia	EK055	SOIL	APHA 21st ed., 4500 NH3+-B&G, H Samples are steam distillated (Buchi) prior to analysis and quantified using FIA or Discrete Analyser.
Nitrite as N - Soluble by Discrete Analyser	EK057G	SOIL	APHA 21st ed., 4500 NO3- B. Nitrite in a water extract is determined by direct colourimetry by Discrete Analyser.
Nitrate as N - Soluble by Discrete Analyser	EK058G	SOIL	APHA 21st ed., 4500 NO3--F. Nitrate in the 1:5 soil:water extract is reduced to nitrite by way of a cadmium reduction column followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results.
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	SOIL	APHA 21st ed., 4500 NO3- F. Combined oxidised Nitrogen (NO2+NO3) in a water extract is determined by Cadmium Reduction, and direct colourimetry by Discrete Analyser.
Coliforms & E.coli (MPN by DST - Colilert/Quanti-tray)	MW004S	SOIL	Report 71 2002
Thermotolerant Coliforms & E.coli by MPN	MW008S	SOIL	AS 4276.6 - 1995

Preparation Methods	Method	Matrix	Method Descriptions
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**
- **For all matrices, no Matrix Spike outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- **No Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

QUALITY CONTROL REPORT

Work Order	: **EM0802914**	Page	: 1 of 9
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MS EMILY BURKE	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: eburke@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 17-APR-2008
Sampler	: EB	Issue Date	: 28-APR-2008
Order number	: 20091		
		No. of samples received	: 4
Quote number	: ----	No. of samples analysed	: 4

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Herman Lin	Senior Inorganic Chemist	Inorganics
Kelly Ding	Senior Microbiologist	Microbiology

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 641612)									
EM0802914-001	4A/T5/0.25	EA002: pH Value	----	0.1	pH Unit	8.7	8.7	0.0	0% - 20%
EA055: Moisture Content (QC Lot: 639570)									
EM0802913-053	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	15.7	16.6	5.5	0% - 50%
EM0802914-003	4A/T5/1.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	4.7	4.5	3.6	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 639454)									
EM0802942-002	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	<10	<10	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	13	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.0	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	13	22	49.9	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	25	24	4.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EM0802942-011	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	<10	<10	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	2	<2	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 640148)									
EM0802914-003	4A/T5/1.0	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	140	130	10.7	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	27	27	0.0	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	10	11	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	29	30	3.8	0% - 50%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	14	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	8	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	211	220	3.9	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	32	33	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	37	38	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EM0802916-009	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	30	40	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	21	22	8.6	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	25	26	0.0	0% - 50%
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	114	120	5.0	0% - 20%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	23	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	523	531	1.5	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	9	10	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	45	48	5.2	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG035T: Total Mercury by FIMS (QC Lot: 639453)									
EM0802745-201	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0802910-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Mercury by FIMS (QC Lot: 640149)									
EM0802914-003	4A/T5/1.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0802916-009	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK055: Ammonia as N (QC Lot: 644378)									
EM0802914-001	4A/T5/0.25	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 641613)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 641613) - continued									
EM0802914-001	4A/T5/0.25	EK057G: Nitrite as N (Sol.)	----	0.100	mg/kg	0.287	0.287	0.0	No Limit
EK059G: NOX as N by Discrete Analyser (QC Lot: 641614)									
EM0802914-001	4A/T5/0.25	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.100	mg/kg	1.33	1.31	2.0	0% - 50%

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 639454)								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	110	84.4	124
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	104	93.3	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	109	90.2	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	108	89.2	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	108	90.6	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	111	88.4	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	109	89	117
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	106	83.9	116
EG005T: Total Metals by ICP-AES (QCLot: 640148)								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	112	84.4	124
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	103	93.3	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	107	90.2	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	106	89.2	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	106	90.6	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	106	88.4	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	106	89	117
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	102	83.9	116
EG035T: Total Mercury by FIMS (QCLot: 639453)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	87.3	71.9	119

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG035T: Total Mercury by FIMS (QCLot: 640149)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	103	71.9	119
EK055: Ammonia as N (QCLot: 644378)								
EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	25 mg/kg	100	86.3	105
EK057G: Nitrite as N by Discrete Analyser (QCLot: 641613)								
EK057G: Nitrite as N (Sol.)	----	0.1	mg/kg	----	2.5 mg/kg	95.3	80	120
		0.100	mg/kg	<0.100	----	----	----	----
EK059G: NOX as N by Discrete Analyser (QCLot: 641614)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	----	2.5 mg/kg	103	80	120
		0.100	mg/kg	<0.100	----	----	----	----

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries . Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 639454)							
EM0802942-003	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	110	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	105	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	122	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	112	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	73.1	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	114	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	107	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	122	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	99.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	108	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	110	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	82.8	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	109	70	130
EG005T: Total Metals by ICP-AES (QCLot: 640148)							
EM0802916-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	121	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	107	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	122	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	115	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	114	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	116	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	117	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	126	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	118	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	110	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	115	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	121	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	120	70	130
EG035T: Total Mercury by FIMS (QCLot: 639453)							
EM0802897-001	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	103	70	130
EG035T: Total Mercury by FIMS (QCLot: 640149)							
EM0802916-001	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	110	70	130
EK055: Ammonia as N (QCLot: 644378)							
EM0802914-002	4A/T5/0.5	EK055: Ammonia as N	7664-41-7	100 mg/kg	95.7	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 641613)							
EM0802914-002	4A/T5/0.5	EK057G: Nitrite as N (Sol.)	----	2.5 mg/kg	93.6	70	130
EK059G: NOX as N by Discrete Analyser (QCLot: 641614)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK059G: NOX as N by Discrete Analyser (QCLot: 641614) - continued							
EM0802914-002	4A/T5/0.5	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.5 mg/kg	104	70	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : **EM0802914**

Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MS EMILY BURKE	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: eburke@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004	Page	: 1 of 2
Order number	: 20091		
C-O-C number	: ----	Quote number	: ES2008OTEK0064 (EN/018/08)
Site	: ----		
Sampler	: EB	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 17-APR-2008	Issue Date	: 21-APR-2008 07:34
Client Requested Due Date	: 28-APR-2008	Scheduled Reporting Date	: **28-APR-2008**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 5.3 C - Ice present
No. of coolers/boxes	: ----	No. of samples received	: 4
Sercurity Seal	: Intact.	No. of samples analysed	: 4

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES	SOIL - EK055 (solids) Ammonia as N	SOIL - EK058G (solids) Nitrate as N - soluble by Discrete Analyser	SOIL - MW004S Coliforms & E.coli (MPN by DST) in solids	SOIL - S-03 13 Metals (NEPM Suite - incl. Digestion)
EM0802914-001	17-APR-2008 15:00	4A/T5/0.25	✓	✓	✓	✓	✓	✓	✓
EM0802914-002	17-APR-2008 15:00	4A/T5/0.5		✓		✓	✓	✓	
EM0802914-003	17-APR-2008 15:00	4A/T5/1.0	✓	✓	✓	✓	✓	✓	✓
EM0802914-004	17-APR-2008 15:00	4A/T5/2.0		✓		✓	✓	✓	

Requested Deliverables

MS CHANTEL WEBBER

- A4 - AU Tax Invoice	Email	chantelwebber@otek.com.au

MS EMILY BURKE

- *AU Certificate of Analysis - NATA	Email	eburke@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	eburke@otek.com.au
- *AU QC Report ¿ DEFAULT (Anon QC Rep) - NATA	Email	eburke@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	eburke@otek.com.au
- A4 - AU Tax Invoice	Email	eburke@otek.com.au
- Default - Chain of Custody	Email	eburke@otek.com.au
- EDI Format - ENMRG	Email	eburke@otek.com.au
- EDI Format - ESDAT	Email	eburke@otek.com.au
- Trigger - Subcontract Report	Email	eburke@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	vicreception@otek.com.au
- *AU QC Report ¿ DEFAULT (Anon QC Rep) - NATA	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice	Email	vicreception@otek.com.au
- Default - Chain of Custody	Email	vicreception@otek.com.au
- EDI Format - ENMRG	Email	vicreception@otek.com.au
- EDI Format - ESDAT	Email	vicreception@otek.com.au
- Trigger - Subcontract Report	Email	vicreception@otek.com.au

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref: ASET14939/ 18119 / 1 - 1
Your ref: EM0802914
NATA Accreditation No: 14484

22 April 2008

Australian Laboratory Services Pty Ltd
4, Westal Road
Springvale VIC 3171

Attn: Mr Paul Loewy

Dear Paul,

Asbestos Identification
This report presents the results of one sample, forwarded by Australian Laboratory Services Pty Ltd on 21 April 2008, for analysis for asbestos.

1.Introduction: One sample forwarded was examined and analysed for the presence of asbestos.

2. Methods : The sample was examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Safer Environment Method 1.)**

3. Results : **Sample No. 1. ASET14939 / 18119 / 1. EM0802914 - 1.**
Approx dimensions 6.0 cm x 5.0 cm x 3.0 cm
The sample consisted of a mixture of clayish soil, stones, plant matter and fragments of cement.
No asbestos detected.

Analysed and reported by,

Karu Jayasundara. BSc (Hons) MAus IMM.
Mineralogist / Chartered Professional of Geology
Approved Signatory/Approved Identifier

This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
Unit 6, 2 Sarton Road, Clayton
Tim Kilmister
95384444

PROJECT # 3106004
PROJECT NAME: Werribee Area 4
COLLECTORS NAME: Emily burke
eburke@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL
FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au
LAB QUOTE REF: ME/055/08
OTEK PO No.: 21191
REMARKS

Environmental Division
Melbourne
Work Order
EM0802914
Telephone : +61-3-8549 9600

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	FLUORIDE Std	TPH (C10-C36) Std	Pb Std	PAH/Phenols Std	PAH Std	PHENOLS Std	OCP/OPP Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	FULL VIC EPA SCREEN Std	ON HOLD
~~4A/T1/0.25~~	~~0.25~~			~~X~~										~~X~~	~~X~~									~~X~~	~~X~~	~~X~~		~~X~~	~~X~~					
~~4A/T1/0.5~~	~~0.50~~			~~X~~																						~~X~~							
~~4A/T1/1.0~~	~~1.00~~			~~X~~										~~X~~	~~X~~									~~X~~		~~X~~		~~X~~	~~X~~					
~~4A/T1/2.0~~	~~2.00~~			~~X~~																													~~X~~
~~4A/T2/0.25~~	~~0.25~~			~~X~~										~~X~~										~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~					
~~4A/T2/0.5~~	~~0.50~~			~~X~~																													~~X~~
~~4A/T2/1.0~~	~~1.00~~			~~X~~																				~~X~~		~~X~~	~~X~~						
~~4A/T3/0.25~~	~~0.25~~			~~X~~										~~X~~		~~X~~		~~X~~			~~X~~		~~X~~	~~X~~	~~X~~	~~X~~	~~X~~	~~X~~				~~X~~	
~~4A/T3/0.5~~	~~0.50~~			~~X~~																						~~X~~							
~~4A/T3/1.0~~	~~1.00~~			~~X~~										~~X~~		~~X~~		~~X~~			~~X~~		~~X~~	~~X~~		~~X~~	~~X~~	~~X~~	~~X~~					
~~4A/T3/2.0~~	~~2.00~~			~~X~~																						~~X~~							
~~4A/T4/0.25~~	~~0.25~~			~~X~~										~~X~~										~~X~~	~~X~~	~~X~~		~~X~~	~~X~~					
~~4A/T4/0.5~~	~~0.50~~			~~X~~																													~~X~~
~~4A/T4/1.0~~	~~1.00~~			~~X~~										~~X~~										~~X~~		~~X~~		~~X~~	~~X~~					
~~4A/T4/2.0~~	~~2.00~~			~~X~~																													~~X~~
4A/T5/0.25	0.25			X			X				17-Apr-08	2		X										X	X	X		X	X					
4A/T5/0.5	0.50			X			X				17-Apr-08	2												X				X	X					
4A/T5/1.0	1.00			X			X				17-Apr-08	2		X										X		X		X	X					
4A/T5/2.0	2.00			X			X				17-Apr-08	2												X				X	X					
This Page				19			19					19		9	2	2		2			2		2	12	5	13	3	12	12				1	19

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

PQLs Required (ug/L)

Relinquished by:	Date	Time	Received by:	Date	Time
	12-4-08	1200			
Relinquished by:	Date	Time	Received by:	Date	Time
			IANIC	17/4	4-30 pm

Custody Seals Intact? Y
Samples Received Chilled? Y

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

5-3.

From: Sarah Hodgson
To: Catherine Crilly
Subject: RE: RPD error
Date: Thursday, 10 March 2011 5:01:57 PM

Hi Catherine,

Our LIMS department have looked at this query, and I've informed me that the reported RPD values are correct. There are 2 reasons for this.

The first is that the RPD values presented in the report are calculated from the raw data, not the rounded data included in the reports. This is applicable to the samples where you have queried a result that is not 0.0%, but an actual number. If you would like, I can find the raw data for you to present the calculations?

The second, where you have queried RPD values of 0.0%, this is a product of the rule used to validate the RPD data. In work order EM0802745, on page 3 of the QC report, the following statement is written:

"The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates … are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit".

During the QC process, the system looks at the highest value of either the Duplicate and the Primary sample, and if the result is lower than 10 times the LOR then it does not calculate an RPD. For example, sample #001 from EM0802745 – the Arsenic results were 5mg/kg for the Primary and 6mg/kg for the DUP. Since the LOR is 5mg/kg, and the highest concentration of Arsenic in these samples is below 10 times the LOR (in this case below 50mg/kg) no RPD has been calculated.

Each analysis (and element) has a different LOR, so you will need to check the sample concentrations against the LOR for that compound.

Please let me know if this makes sense, or if you need me to better explain it.

Thanks Catherine,

Regards,

How was your customer experience? Please send us your feedback

Sarah Hodgson

PROJECT MANAGER

ALS | Environmental (General Environmental Group)

Address
4 Westall Road
Springvale VIC 3171

PHONE +61 3 8549 9600
FAX +61 3 8549 9601

www.alsglobal.com

From: Catherine Crilly [mailto:CCrilly@otek.com.au]
Sent: Tuesday, 8 March 2011 12:45 PM
To: Sarah Hodgson
Subject: RPD error

Hi Sarah, below is a table of errors our auditor has found.

EM0802745, EM0803020 and EM0802914. In addition to the miscalculations there have been several cases where there are RPDs calculated as 0.0%, when the primary and duplicate result have not been identical? The following list is an example of the RPDs checked (this is not an inclusive list of errors encountered):

Report No.	Page # in Report	Analyte	Primary Result (mg/kg)	Duplicate Result (mg/kg)	RPD in lab report	RPD check
EM0802745	80 of 163	Cobalt	9	10	14.2%	10.5

		Arsenic	5	6	0.0%	18.2
	81 of 163	zinc	27	28	0.0%	3.6
		Cobalt	13	12	0.0%	8.0
		Manganese	316	299	5.5%	5.5
		Barium	60	70	0.0%	15.4
	82 of 163	Chromium	30	29	3.8%	3.4
		Cobalt	9	8	0.0%	11.8
	83of 163	Lead	10	12	21.9%	18.2
	84 of 163	Vanadium	60	48	21.6%	22.2
	85 of 163	Vanadium	39	38	0.0%	2.6
	86 of 163	Fluoride	400	410	3.7%	2.5
EM0802914	9 of 24	Manganese	13	22	49.9%	51.4
		Vanadium	25	24	4.4%	4.1
	10 of 24	Cobalt	10	11	0.0%	9.5
		Vanadium	32	33	0.0%	3.1
		Manganese	523	531	1.5%	1.5
EM0803020	39 of 50	Chromium	24	25	4.9%	4.1
		Chromium	35	36	0.0%	2.8
		Arsenic	8	9	14.9%	11.8
		Arsenic	6	7	0.0%	15.4
	40 of 50	Arsenic	81	64	24.1%	23.4
		Arsenic	15	16	0.0%	6.5

Kind regards,

Catherine Crilly - Casual Environmental Scientist

Practical Environmental Solutions

T: 03 9095 1943 (Direct) **T:** 03 9525 5155 (Switch) **F:** 03 9593 8555

E: ccrilly@otek.com.au **W:** www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

CHAIN OF CUSTODY DOCUMENTATION

TAT: 5 DAY
DUE DATE: 23/04/2008

PURCHASE ORDER #: 350061

ALS BATCH #: EM0802914

FROM:
ALS Environmental,
2-4 Westall Road,
Springvale, Vic, 3171

TO:
ASET,
7/70 Kingsway,
Glenwaverly, Vic, 3150

Please email results to: subresults.mel@alsenviro.com

SAMPLE IDENTIFICATION	CONTAINER DETAILS			LABORATORY PERAMETERS						
	DATE:	TYPE:	NO.	ASBESTOS						
EM0802914 - 1	17-Apr	SOIL	1	X						

NOTES:
1. Please ensure that a signed copy is faxed back immediately to ALS Melbourne acknowledging receipt.
2. Contact Paul Loewy if the requested TAT cannot be met 03 8549 9600

RELINQUISHED BY (SIGN / PRINT): Carla McFadyen	DATE: 18/4/08	RECEIVED BY (SIGN / PRINT):	DATE:
OF: ALS	TIME: 11:08 AM	OF: (ARRIVAL TEMP: deg.C)	TIME:
RELINQUISHED BY (SIGN / PRINT):	DATE:	RECEIVED BY (SIGN / PRINT)	DATE:
OF: ALS	TIME:	OF: (ARRIVAL TEMP: deg.C)	TIME:

ALS Environmental

DATA VALIDATION REPORT

Project Name:	Werribee Area 4, Sub-Area 4A/B	**Validation Conducted by:**	KJB
Project Number:	3106004	**Signed & Dated:**	18/05/2010
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	ALS	**Secondary Laboratory:**	Labmark	**Soil**
Batch Number:	EM0803020	**Batch Number:**	08ENME0010069	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
98	2	2	2

Refer to OTEK QA/QC results table

	Have the Following Criteria Been Met? (Shade)			**Explain any Discrepancies:**
Blind Replicate	**OK if >5%**	4.0186	**NOT OK if <5%**	More quality samples in other batches
Split Sample	**OK if >5%**	4.0186	**NOT OK if <5%**	More quality samples in other batches
Blank Samples	**OK**	2	**NOT OK**	

2	Rinsate
0	Field
0	Trip

TRIP SAMPLE SENT IN OTHER BATCH

	Field Primary Duplicates (Blind)		**Field Secondary Duplicates (Split)**	
	2	**Number obtained**	**2**	
	4B/QS-33, 34	**Sample Identification**	4B/QS-33A, 34A	
A	6	**Total Number of Analytes**	6	**B**
	0	**No. of analytes with RPD >50% (Fail)**	0	
	6	**Number of analytes <50% (Pass)**	6	
	100.0	**% Pass**	100.0	

Explain any Discrepancies:

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	**Field**	**Rinsate**
Total Number			2
Sample Identifictaion			4B/RB-17, RB-18
Number of Analytes			6
No. Analytes >PQL **(FAIL)**			0
% Pass			100.00
	C	**D**	**E**

Explain any Discrepancies:

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A/B

Validation Conducted by: KJB

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	6	2
	No. Fails	0	0
Analysis	**No. Passes**	8	2
	No. Fails	2	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	**F**	**G**
	Primary	**Secondary**
TOTAL # Analytes of DUP Samples	46	
# samples RPD >50% **(FAIL)**	0	
% Pass	100	

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

No data provided from the Secondary Laboratory, Labmark

Method Blank Analysis (MB)	**H**	**I**
	Primary	**Secondary**
TOTAL # Analytes	18	17
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	**J**	**K**
	Primary	**Secondary**
TOTAL # Analytes	18	17
# analytes outside range i.e <70% or >130% **(FAIL)**	0	0
% Pass	100	100

Surrogates

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	**L**	**M**
	Primary	**Secondary**
TOTAL # Analytes	16	
# analytes outside range i.e <70% or >130% **(FAIL)**	0	
% Pass	100	

Internal Spikes

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

No data provided from the Secondary Laboratory, Labmark

FINAL DATA

	Sample Type	**Total Data Quality Objective Fails**	**Total Number of Results**	**% Data Quality Objective Passes**
A	**Primary Duplicates**	0	6	100.0
B	**Secondary Duplicates**	0	6	100.0
C	**Trip Blanks**	0	0	-
D	**Field Blanks**	0	0	-
E	**Rinsate Blanks**	0	6	100.0
F & G	**Lab Internal Duplicates**	0	46	100.0
H & I	**Lab Method Blanks**	0	35	100.0
J & K	**Lab Internal Spike Recoveries**	0	35	100.0
L & M	**Laboratory Spike Recoveries**	0	16	100.0
	Total	**0**	**150**	**100.0**

Overall Explanation for Failures:

Pass = >95%

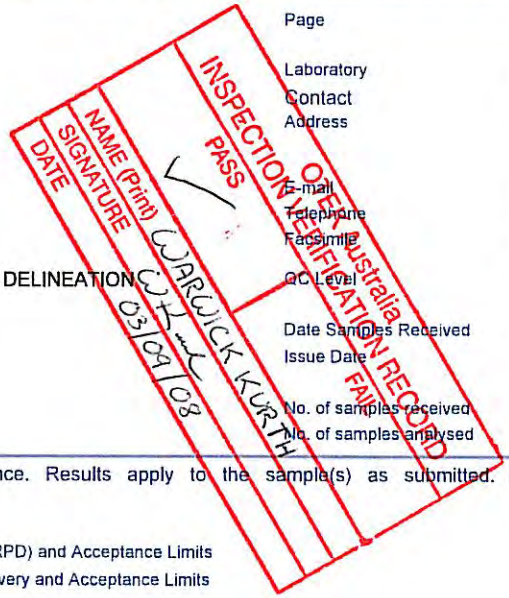
Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

Environmental Division

QUALITY CONTROL REPORT

Work Order	: **EM0803020**	Page	: 1 of 6
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR CHRISTIAN BEASLEY	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: cbeasley@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4B METAL DELINEATION	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ---		
C-O-C number	: ---	Date Samples Received	: 21-APR-2008
Sampler	: CB, EB	Issue Date	: 30-APR-2008
Order number	: 21194	No. of samples received	: 104
Quote number	: ---	No. of samples analysed	: 102



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Terrance Hettipathirana	Senior ICP/MS Chemist	Inorganics

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0803020**	Page	: 1 of 23
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
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Project	: 3106004 - WERRIBEE AREA 4B METAL DELINEATION	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 21194		
C-O-C number	: ----	Date Samples Received	: 21-APR-2008
Sampler	: CB, EB	Issue Date	: 30-APR-2008
Site	: ----		
		No. of samples received	: 104
Quote number	: ----	No. of samples analysed	: 102

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Terrance Hettipathirana	Senior ICP/MS Chemist	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **EG005T : EM0803020 #61 duplicate failed for chromium due to sample heterogeneity.**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4B/G4/W1/0.1	4B/G4/W1/0.25	4B/G4/W1/0.5	4B/G4/W1/1.0	4B/G4/W2/0.1
				Client sampling date / time: 17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
				EM0803020-001	EM0803020-002	EM0803020-003	EM0803020-004	EM0803020-005
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**6.6**	**13.1**	**23.0**	**19.9**	**7.1**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**12**	**8**	**8**	**8**	**61**
Chromium	7440-47-3	2	mg/kg	**24**	**29**	**39**	**55**	**70**
Copper	7440-50-8	5	mg/kg	**30**	**12**	**26**	**29**	**36**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4B/G4/W2/0.25	4B/G4/W2/0.5	4B/G4/W2/1.0	4B/G4/W3/0.1	4B/G4/W3/0.25
				Client sampling date / time: 17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
				EM0803020-006	EM0803020-007	EM0803020-008	EM0803020-009	EM0803020-010
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**14.1**	**19.4**	**22.0**	**6.5**	**17.2**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**7**	**8**	**8**	**42**	**7**
Chromium	7440-47-3	2	mg/kg	**35**	**46**	**34**	**37**	**43**
Copper	7440-50-8	5	mg/kg	**14**	**31**	**24**	**30**	**18**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4B/G4/W3/0.5	4B/G4/W3/1.0	4B/G4/W4/0.1	4B/G4/W4/0.25	4B/G4/W4/0.5
				Client sampling date / time: 17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
				EM0803020-011	EM0803020-012	EM0803020-013	EM0803020-014	EM0803020-015
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**20.1**	**21.9**	**5.7**	**16.3**	**19.6**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**9**	**8**	**28**	**8**	**9**
Chromium	7440-47-3	2	mg/kg	**43**	**35**	**30**	**47**	**45**
Copper	7440-50-8	5	mg/kg	**29**	**24**	**22**	**20**	**31**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4B/G4/W4/1.0	4B/T57/N1/0.25	4B/T57/N1/0.5	4B/T57/N1/1.0	4B/T57/N1/1.5
				Client sampling date / time: 17-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
				EM0803020-016	EM0803020-017	EM0803020-018	EM0803020-019	EM0803020-020
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**21.8**	**8.9**	**15.5**	**14.7**	**17.1**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**8**	**419**	**61**	**7**	**8**
Chromium	7440-47-3	2	mg/kg	**37**	**399**	**108**	**39**	**38**
Copper	7440-50-8	5	mg/kg	**26**	**146**	**36**	**23**	**26**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/T57/N1/2.0	4B/T57/N2/0.25	4B/T57/N2/0.5	4B/T57/N2/1.0	4B/T57/N2/1.5
				Client sampling date / time	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
					EM0803020-021	EM0803020-022	EM0803020-023	EM0803020-024	EM0803020-025
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**20.8**	**11.5**	**16.0**	**14.8**	**14.8**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	**602**	**182**	**17**	**8**
Chromium	7440-47-3	2	mg/kg		**35**	**508**	**214**	**48**	**37**
Copper	7440-50-8	5	mg/kg		**22**	**174**	**127**	**30**	**25**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/T57/N2/2.0	4B/T57/N3/0.25	4B/T57/N3/0.5	4B/T57/N3/1.0	4B/T57/N3/1.5
				Client sampling date / time	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
					EM0803020-026	EM0803020-027	EM0803020-028	EM0803020-029	EM0803020-030
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**14.5**	**7.4**	**14.2**	**9.7**	**13.4**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	**553**	**28**	**7**	**8**
Chromium	7440-47-3	2	mg/kg		**29**	**434**	**60**	**39**	**38**
Copper	7440-50-8	5	mg/kg		**19**	**166**	**28**	**25**	**25**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/T57/N3/2.0	4B/T57/N4/0.25	4B/T57/N4/0.5	4B/T57/N4/1.0	4B/T57/N4/1.5
				Client sampling date / time	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
					EM0803020-031	EM0803020-032	EM0803020-033	EM0803020-034	EM0803020-035
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**25.8**	**4.2**	**13.9**	**10.5**	**16.6**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	**84**	**21**	**7**	**8**
Chromium	7440-47-3	2	mg/kg		**32**	**89**	**63**	**44**	**40**
Copper	7440-50-8	5	mg/kg		**19**	**52**	**30**	**24**	**26**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/T57/N4/2.0	4B/G4/N1/0.1	4B/G4/N1/0.25	4B/G4/N1/0.5	4B/G4/N1/1.0
				Client sampling date / time	18-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
					EM0803020-036	EM0803020-037	EM0803020-038	EM0803020-039	EM0803020-040
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**26.0**	**4.7**	**15.0**	**18.9**	**19.6**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	**20**	**19**	**8**	**7**
Chromium	7440-47-3	2	mg/kg		**35**	**29**	**35**	**40**	**34**
Copper	7440-50-8	5	mg/kg		**20**	**32**	**14**	**26**	**23**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/G4/N2/0.1	4B/G4/N2/0.25	4B/G4/N2/0.5	4B/G4/N2/1.0	4B/G4/N3/0.1
				Client sampling date / time	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
					EM0803020-041	EM0803020-042	EM0803020-043	EM0803020-044	EM0803020-045
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**3.5**	**11.3**	**17.7**	**19.2**	**3.7**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	**6**	**9**	**8**	<5
Chromium	7440-47-3	2	mg/kg		**18**	**29**	**48**	**37**	**18**
Copper	7440-50-8	5	mg/kg		**27**	**12**	**32**	**24**	**28**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4B/G4/N3/0.25	4B/G4/N3/0.5	4B/G4/N3/1.0	4B/G4/N4/0.1	4B/G4/N4/0.25
				Client sampling date / time: 17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
				EM0803020-046	EM0803020-047	EM0803020-048	EM0803020-049	EM0803020-050
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**14.1**	**18.3**	**18.8**	**2.8**	**10.2**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**6**	**8**	**8**	**6**	**8**
Chromium	7440-47-3	2	mg/kg	**36**	**42**	**36**	**18**	**30**
Copper	7440-50-8	5	mg/kg	**15**	**27**	**25**	**29**	**20**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/G4/N4/0.5	4B/G4/N4/1.0	4B/G4/E1/0.1	4B/G4/E1/0.25	4B/G4/E1/0.5
				Client sampling date / time	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
					EM0803020-051	EM0803020-052	EM0803020-053	EM0803020-054	EM0803020-055
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**16.9**	**17.7**	**3.1**	**17.1**	**19.4**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**9**	**8**	**6**	**11**	**8**
Chromium	7440-47-3	2	mg/kg		**48**	**38**	**20**	**47**	**40**
Copper	7440-50-8	5	mg/kg		**32**	**25**	**29**	**25**	**25**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/G4/E1/1.0	4B/G4/E2/0.1	4B/G4/E2/0.25	4B/G4/E2/0.5	4B/G4/E2/1.0
				Client sampling date / time	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
					EM0803020-056	EM0803020-057	EM0803020-058	EM0803020-059	EM0803020-060
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**18.1**	**17.1**	**15.7**	**17.2**	**18.9**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**8**	**12**	**6**	**9**	**8**
Chromium	7440-47-3	2	mg/kg		**49**	**24**	**32**	**42**	**36**
Copper	7440-50-8	5	mg/kg		**27**	**28**	**12**	**29**	**24**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4B/G4/E3/0.1	4B/G4/E3/0.25	4B/G4/E3/0.5	4B/G4/E3/1.0	4B/G4/E4/0.1
				Client sampling date / time: 17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
				EM0803020-061	EM0803020-062	EM0803020-063	EM0803020-064	EM0803020-065
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**6.2**	**12.7**	**18.6**	**18.9**	**9.0**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**56**	**8**	**9**	**7**	**22**
Chromium	7440-47-3	2	mg/kg	**58**	**29**	**45**	**34**	**54**
Copper	7440-50-8	5	mg/kg	**35**	**12**	**31**	**24**	**36**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/G4/E4/0.25	4B/G4/E4/0.5	4B/G4/E4/1.0	4B/G13/W1/0.25	4B/G13/W1/0.5
				Client sampling date / time	17-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
					EM0803020-066	EM0803020-067	EM0803020-068	EM0803020-069	EM0803020-070
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**13.0**	**19.4**	**20.3**	**7.9**	**11.5**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**29**	**9**	**7**	**311**	**17**
Chromium	7440-47-3	2	mg/kg		**40**	**49**	**35**	**314**	**55**
Copper	7440-50-8	5	mg/kg		**23**	**33**	**24**	**117**	**30**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/G13/W1/1.0	4B/G13/W1/1.5	4B/G13/W1/2.0	4B/G13/W2/0.25	4B/G13/W2/0.5
				Client sampling date / time	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
					EM0803020-071	EM0803020-072	EM0803020-073	EM0803020-074	EM0803020-075
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**7.6**	**11.4**	**9.5**	**6.0**	**7.6**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**14**	**8**	**6**	**471**	**30**
Chromium	7440-47-3	2	mg/kg		**37**	**42**	**35**	**420**	**60**
Copper	7440-50-8	5	mg/kg		**24**	**25**	**20**	**330**	**30**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	4B/G13/W2/1.0	4B/G13/W2/1.5	4B/G13/W2/2.0	4B/G13/W3/0.25	4B/G13/W3/0.5
				Client sampling date / time	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
					EM0803020-076	EM0803020-077	EM0803020-078	EM0803020-079	EM0803020-080
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**8.4**	**11.7**	**12.5**	**5.7**	**9.6**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**8**	**7**	**6**	**498**	**28**
Chromium	7440-47-3	2	mg/kg		**35**	**32**	**38**	**444**	**58**
Copper	7440-50-8	5	mg/kg		**23**	**24**	**23**	**278**	**35**

Analytical Results

Sub-Matrix: SOIL				Client sample ID	4B/G13/W3/1.0	4B/G13/W3/1.5	4B/G13/W3/2.0	4B/G13/W4/0.25	4B/G13/W4/0.5
				Client sampling date / time	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
Compound	CAS Number	LOR	Unit		EM0803020-081	EM0803020-082	EM0803020-083	EM0803020-084	EM0803020-085
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**7.8**	**12.3**	**13.5**	**4.1**	**7.4**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**81**	**14**	**10**	**195**	**11**
Chromium	7440-47-3	2	mg/kg		**58**	**42**	**49**	**109**	**45**
Copper	7440-50-8	5	mg/kg		**37**	**28**	**31**	**54**	**22**

Analytical Results

Sub-Matrix: SOIL				Client sample ID	4B/G13/W4/1.0	4B/G13/W4/1.5	4B/G13/W4/2.0	4B/G13/W5/0.25	4B/G13/W5/0.5
				Client sampling date / time	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
Compound	CAS Number	LOR	Unit		EM0803020-086	EM0803020-087	EM0803020-088	EM0803020-089	EM0803020-090
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**7.4**	**11.8**	**9.8**	**8.1**	**7.7**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	**8**	**8**	**116**	**15**
Chromium	7440-47-3	2	mg/kg		**36**	**36**	**37**	**124**	**53**
Copper	7440-50-8	5	mg/kg		**22**	**26**	**23**	**56**	**23**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4B/G13/W5/1.0	4B/G13/W5/1.5	4B/G13/W5/2.0	4B/G13/W6/0.25	4B/G13/W6/0.5
				Client sampling date / time: 18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00
				EM0803020-091	EM0803020-092	EM0803020-093	EM0803020-094	EM0803020-095
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**8.0**	**11.8**	**9.9**	**6.0**	**6.3**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**12**	**8**	**10**	**64**	**78**
Chromium	7440-47-3	2	mg/kg	**44**	**39**	**40**	**88**	**97**
Copper	7440-50-8	5	mg/kg	**24**	**28**	**24**	**40**	**42**

Analytical Results

Sub-Matrix: SOIL				Client sample ID	4B/G13/W6/1.0	4B/G13/W6/1.5	4B/G13/W6/2.0	4B/QS-33	4B/QS-34
				Client sampling date / time	18-APR-2008 15:00	18-APR-2008 15:00	18-APR-2008 15:00	17-APR-2008 15:00	17-APR-2008 15:00
Compound	CAS Number	LOR	Unit		EM0803020-096	EM0803020-097	EM0803020-098	EM0803020-099	EM0803020-100
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**6.8**	**11.5**	**9.9**	**11.5**	**18.9**
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**8**	**8**	**6**	**7**	**8**
Chromium	7440-47-3	2	mg/kg		**38**	**37**	**36**	**37**	**39**
Copper	7440-50-8	5	mg/kg		**25**	**27**	**21**	**17**	**25**

Analytical Results

Sub-Matrix: **WATER**				Client sample ID	**4B/RB-17**	**4B/RB-18**	----	----	----
				Client sampling date / time	17-APR-2008 15:00	18-APR-2008 15:00	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**EM0803020-101**	**EM0803020-102**	**----**	**----**	**----**
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	----	----	----

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0803020**	Page	: 1 of 10
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4B METAL DELINEATION	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 21-APR-2008
Sampler	: CB, EB	Issue Date	: 30-APR-2008
Order number	: 21194		
		No. of samples received	: 104
Quote number	: ----	No. of samples analysed	: 102

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
4B/G4/W1/0.1, 4B/G4/W1/0.25, 4B/G4/W1/0.5, 4B/G4/W1/1.0, 4B/G4/W2/0.1, 4B/G4/W2/0.25, 4B/G4/W2/0.5, 4B/G4/W2/1.0, 4B/G4/W3/0.1, 4B/G4/W3/0.25, 4B/G4/W3/0.5, 4B/G4/W3/1.0, 4B/G4/W4/0.1, 4B/G4/W4/0.25, 4B/G4/W4/0.5, 4B/G4/W4/1.0, 4B/G4/N1/0.1, 4B/QS-33, 4B/G4/N1/0.25, 4B/G4/N1/0.5, 4B/G4/N1/1.0, 4B/G4/N2/0.1, 4B/G4/N2/0.25, 4B/G4/N2/0.5, 4B/G4/N2/1.0, 4B/G4/N3/0.1, 4B/G4/N3/0.25, 4B/G4/N3/0.5, 4B/G4/N3/1.0, 4B/G4/N4/0.1, 4B/G4/N4/0.25, 4B/G4/N4/0.5, 4B/G4/N4/1.0, 4B/G4/E1/0.1, 4B/G4/E1/0.25, 4B/QS-34, 4B/G4/E1/0.5, 4B/G4/E1/1.0, 4B/G4/E2/0.1, 4B/G4/E2/0.25, 4B/G4/E2/0.5, 4B/G4/E2/1.0, 4B/G4/E3/0.1, 4B/G4/E3/0.25, 4B/G4/E3/0.5, 4B/G4/E3/1.0, 4B/G4/E4/0.1, 4B/G4/E4/0.25, 4B/G4/E4/0.5, 4B/G4/E4/1.0	**17-APR-2008**	**----**	----	----	**28-APR-2008**	24-APR-2008	×

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content - Continued								
Soil Glass Jar - Unpreserved								
4B/T57/N1/0.25,	4B/T57/N1/0.5,	**18-APR-2008**	**----**	----	----	**28-APR-2008**	25-APR-2008	×
4B/T57/N1/1.0,	4B/T57/N1/1.5,							
4B/T57/N1/2.0,	4B/T57/N2/0.25,							
4B/T57/N2/0.5,	4B/T57/N2/1.0,							
4B/T57/N2/1.5,	4B/T57/N2/2.0,							
4B/T57/N3/0.25,	4B/T57/N3/0.5,							
4B/T57/N3/1.0,	4B/T57/N3/1.5,							
4B/T57/N3/2.0,	4B/T57/N4/0.25,							
4B/T57/N4/0.5,	4B/T57/N4/1.0,							
4B/T57/N4/1.5,	4B/T57/N4/2.0,							
4B/G13/W1/0.25,	4B/G13/W1/0.5,							
4B/G13/W1/1.0,	4B/G13/W1/1.5,							
4B/G13/W1/2.0,	4B/G13/W2/0.25,							
4B/G13/W2/0.5,	4B/G13/W2/1.0,							
4B/G13/W2/1.5,	4B/G13/W2/2.0,							
4B/G13/W3/0.25,	4B/G13/W3/0.5,							
4B/G13/W3/1.0,	4B/G13/W3/1.5,							
4B/G13/W3/2.0,	4B/G13/W4/0.25,							
4B/G13/W4/0.5,	4B/G13/W4/1.0,							
4B/G13/W4/1.5,	4B/G13/W4/2.0,							
4B/G13/W5/0.25,	4B/G13/W5/0.5,							
4B/G13/W5/1.0,	4B/G13/W5/1.5,							
4B/G13/W5/2.0,	4B/G13/W6/0.25,							
4B/G13/W6/0.5,	4B/G13/W6/1.0,							
4B/G13/W6/1.5,	4B/G13/W6/2.0							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved								
4B/G4/W1/0.1,	4B/G4/W1/0.25,	**17-APR-2008**	**28-APR-2008**	14-OCT-2008	✓	**29-APR-2008**	14-OCT-2008	✓
4B/G4/W1/0.5,	4B/G4/W1/1.0,							
4B/G4/W2/0.1,	4B/G4/W2/0.25,							
4B/G4/W2/0.5,	4B/G4/W2/1.0,							
4B/G4/W3/0.1,	4B/G4/W3/0.25,							
4B/G4/W3/0.5,	4B/G4/W3/1.0,							
4B/G4/W4/0.1,	4B/G4/W4/0.25,							
4B/G4/W4/0.5,	4B/G4/W4/1.0,							
4B/G4/N1/0.1,	4B/G4/N1/0.25,							
4B/G4/N1/0.5,	4B/G4/N1/1.0							
Soil Glass Jar - Unpreserved								
4B/G4/N2/0.1,	4B/G4/N2/0.25,	**17-APR-2008**	**29-APR-2008**	14-OCT-2008	✓	**29-APR-2008**	14-OCT-2008	✓
4B/G4/N2/0.5,	4B/G4/N2/1.0,							
4B/G4/N3/0.1,	4B/G4/N3/0.25,							
4B/G4/N3/0.5,	4B/G4/N3/1.0,							
4B/G4/N4/0.1,	4B/G4/N4/0.25,							
4B/G4/N4/0.5,	4B/G4/N4/1.0,							
4B/G4/E1/0.1,	4B/G4/E1/0.25,							
4B/G4/E1/0.5,	4B/G4/E1/1.0,							
4B/G4/E2/0.1,	4B/G4/E2/0.25,							
4B/G4/E2/0.5,	4B/G4/E2/1.0,							
4B/G4/E3/0.1,	4B/G4/E3/0.25,							
4B/G4/E3/0.5,	4B/G4/E3/1.0,							
4B/G4/E4/0.1,	4B/G4/E4/0.25,							
4B/G4/E4/0.5,	4B/G4/E4/1.0							
Soil Glass Jar - Unpreserved								
4B/QS-33,	4B/QS-34	**17-APR-2008**	**29-APR-2008**	14-OCT-2008	✓	**30-APR-2008**	14-OCT-2008	✓
Soil Glass Jar - Unpreserved								
4B/T57/N1/0.25,	4B/T57/N1/0.5,	**18-APR-2008**	**28-APR-2008**	15-OCT-2008	✓	**29-APR-2008**	15-OCT-2008	✓
4B/T57/N1/1.0,	4B/T57/N1/1.5,							
4B/T57/N1/2.0,	4B/T57/N2/0.25,							
4B/T57/N2/0.5,	4B/T57/N2/1.0,							
4B/T57/N2/1.5,	4B/T57/N2/2.0,							
4B/T57/N3/0.25,	4B/T57/N3/0.5,							
4B/T57/N3/1.0,	4B/T57/N3/1.5,							
4B/T57/N3/2.0,	4B/T57/N4/0.25,							
4B/T57/N4/0.5,	4B/T57/N4/1.0,							
4B/T57/N4/1.5,	4B/T57/N4/2.0							
Soil Glass Jar - Unpreserved								
4B/G13/W1/0.25,	4B/G13/W1/0.5,	**18-APR-2008**	**29-APR-2008**	15-OCT-2008	✓	**29-APR-2008**	15-OCT-2008	✓
4B/G13/W1/1.0,	4B/G13/W1/1.5,							
4B/G13/W1/2.0,	4B/G13/W2/0.25,							
4B/G13/W2/0.5,	4B/G13/W2/1.0,							
4B/G13/W2/1.5,	4B/G13/W2/2.0,							
4B/G13/W3/0.25,	4B/G13/W3/0.5							

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005T: Total Metals by ICP-AES - Continued							
Soil Glass Jar - Unpreserved							
4B/G13/W3/1.0, 4B/G13/W3/1.5, 4B/G13/W3/2.0, 4B/G13/W4/0.25, 4B/G13/W4/0.5, 4B/G13/W4/1.0, 4B/G13/W4/1.5, 4B/G13/W4/2.0, 4B/G13/W5/0.25, 4B/G13/W5/0.5, 4B/G13/W5/1.0, 4B/G13/W5/1.5, 4B/G13/W5/2.0, 4B/G13/W6/0.25, 4B/G13/W6/0.5, 4B/G13/W6/1.0, 4B/G13/W6/1.5, 4B/G13/W6/2.0	**18-APR-2008**	**29-APR-2008**	15-OCT-2008	✓	**30-APR-2008**	15-OCT-2008	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered							
4B/RB-17	**17-APR-2008**	**---**	---	----	**28-APR-2008**	14-OCT-2008	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered							
4B/RB-18	**18-APR-2008**	**---**	---	----	**28-APR-2008**	15-OCT-2008	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	10	100	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	10	100	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Metals by ICP-AES	EG005T	5	100	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Metals by ICP-AES	EG005T	5	100	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Metals by ICP-AES	EG005T	5	100	**5.0**	**5.0**	✓	ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005T: Total Metals by ICP-AES	EM0803020-061	4B/G4/E3/0.1	**Chromium**	7440-47-3	22.6 %	0-20%	**RPD exceeds LOR based limits**
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EM0803020-022	4B/T57/N2/0.25	**Arsenic**	7440-38-2	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0803020-022	4B/T57/N2/0.25	**Chromium**	7440-47-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **SOIL**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA055: Moisture Content						

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved						
4B/G4/W1/0.1, 4B/G4/W1/0.25, 4B/G4/W1/0.5, 4B/G4/W1/1.0, 4B/G4/W2/0.1, 4B/G4/W2/0.25, 4B/G4/W2/0.5, 4B/G4/W2/1.0, 4B/G4/W3/0.1, 4B/G4/W3/0.25, 4B/G4/W3/0.5, 4B/G4/W3/1.0, 4B/G4/W4/0.1, 4B/G4/W4/0.25, 4B/G4/W4/0.5, 4B/G4/W4/1.0, 4B/G4/N1/0.1, 4B/QS-33, 4B/G4/N1/0.25, 4B/G4/N1/0.5, 4B/G4/N1/1.0, 4B/G4/N2/0.1, 4B/G4/N2/0.25, 4B/G4/N2/0.5, 4B/G4/N2/1.0, 4B/G4/N3/0.1, 4B/G4/N3/0.25, 4B/G4/N3/0.5, 4B/G4/N3/1.0, 4B/G4/N4/0.1, 4B/G4/N4/0.25, 4B/G4/N4/0.5, 4B/G4/N4/1.0, 4B/G4/E1/0.1, 4B/G4/E1/0.25, 4B/QS-34, 4B/G4/E1/0.5, 4B/G4/E1/1.0, 4B/G4/E2/0.1, 4B/G4/E2/0.25, 4B/G4/E2/0.5, 4B/G4/E2/1.0, 4B/G4/E3/0.1, 4B/G4/E3/0.25, 4B/G4/E3/0.5, 4B/G4/E3/1.0, 4B/G4/E4/0.1, 4B/G4/E4/0.25, 4B/G4/E4/0.5, 4B/G4/E4/1.0	----	----	----	28-APR-2008	24-APR-2008	4

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content - Analysis Holding Time Compliance							
Soil Glass Jar - Unpreserved							
4B/T57/N1/0.25,	4B/T57/N1/0.5,	----	----	----	28-APR-2008	25-APR-2008	3
4B/T57/N1/1.0,	4B/T57/N1/1.5,						
4B/T57/N1/2.0,	4B/T57/N2/0.25,						
4B/T57/N2/0.5,	4B/T57/N2/1.0,						
4B/T57/N2/1.5,	4B/T57/N2/2.0,						
4B/T57/N3/0.25,	4B/T57/N3/0.5,						
4B/T57/N3/1.0,	4B/T57/N3/1.5,						
4B/T57/N3/2.0,	4B/T57/N4/0.25,						
4B/T57/N4/0.5,	4B/T57/N4/1.0,						
4B/T57/N4/1.5,	4B/T57/N4/2.0,						
4B/G13/W1/0.25,	4B/G13/W1/0.5,						
4B/G13/W1/1.0,	4B/G13/W1/1.5,						
4B/G13/W1/2.0,	4B/G13/W2/0.25,						
4B/G13/W2/0.5,	4B/G13/W2/1.0,						
4B/G13/W2/1.5,	4B/G13/W2/2.0,						
4B/G13/W3/0.25,	4B/G13/W3/0.5,						
4B/G13/W3/1.0,	4B/G13/W3/1.5,						
4B/G13/W3/2.0,	4B/G13/W4/0.25,						
4B/G13/W4/0.5,	4B/G13/W4/1.0,						
4B/G13/W4/1.5,	4B/G13/W4/2.0,						
4B/G13/W5/0.25,	4B/G13/W5/0.5,						
4B/G13/W5/1.0,	4B/G13/W5/1.5,						
4B/G13/W5/2.0,	4B/G13/W6/0.25,						
4B/G13/W6/0.5,	4B/G13/W6/1.0,						
4B/G13/W6/1.5,	4B/G13/W6/2.0						

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

QUALITY CONTROL REPORT

Work Order	: **EM0803020**	Page	: 1 of 6
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR CHRISTIAN BEASLEY	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: cbeasley@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4B METAL DELINEATION	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 21-APR-2008
Sampler	: CB, EB	Issue Date	: 30-APR-2008
Order number	: 21194		
		No. of samples received	: 104
Quote number	: ----	No. of samples analysed	: 102

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Terrance Hettipathirana	Senior ICP/MS Chemist	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 644456)									
EM0803020-004	4B/G4/W1/1.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	19.9	19.6	1.3	0% - 50%
EM0803020-011	4B/G4/W3/0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	20.1	18.6	7.8	0% - 50%
EA055: Moisture Content (QC Lot: 644457)									
EM0803020-024	4B/T57/N2/1.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	14.8	15.0	1.2	0% - 50%
EM0803020-031	4B/T57/N3/2.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	25.8	26.0	0.4	0% - 20%
EA055: Moisture Content (QC Lot: 644458)									
EM0803020-044	4B/G4/N2/1.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	19.2	19.1	0.0	0% - 50%
EM0803020-051	4B/G4/N4/0.5	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	16.9	17.4	3.0	0% - 50%
EA055: Moisture Content (QC Lot: 644459)									
EM0803020-064	4B/G4/E3/1.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	18.9	19.6	3.7	0% - 50%
EM0803020-071	4B/G13/W1/1.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.6	8.0	5.4	No Limit
EA055: Moisture Content (QC Lot: 644460)									
EM0803020-084	4B/G13/W4/0.25	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	4.1	4.8	14.2	No Limit
EM0803020-091	4B/G13/W5/1.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	8.0	7.8	2.2	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 644745)									
EM0803020-001	4B/G4/W1/0.1	EG005T: Chromium	7440-47-3	2	mg/kg	24	25	4.9	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	12	13	11.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	30	30	0.0	No Limit
EM0803020-010	4B/G4/W3/0.25	EG005T: Chromium	7440-47-3	2	mg/kg	43	43	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	18	18	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 644746)									
EM0803020-021	4B/T57/N1/2.0	EG005T: Chromium	7440-47-3	2	mg/kg	35	36	0.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	7	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	22	0.0	No Limit
EM0803020-030	4B/T57/N3/1.5	EG005T: Chromium	7440-47-3	2	mg/kg	38	42	9.4	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	9	14.9	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	25	28	11.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 644748)									
EM0803020-041	4B/G4/N2/0.1	EG005T: Chromium	7440-47-3	2	mg/kg	18	17	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	27	25	9.7	No Limit
EM0803020-050	4B/G4/N4/0.25	EG005T: Chromium	7440-47-3	2	mg/kg	30	31	0.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	11	25.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	20	20	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 644749)									
EM0803020-061	4B/G4/E3/0.1	EG005T: Chromium	7440-47-3	2	mg/kg	58	46	# 22.6	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	56	43	25.5	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 644749) - continued									
EM0803020-061	4B/G4/E3/0.1	EG005T: Copper	7440-50-8	5	mg/kg	35	32	10.3	No Limit
EM0803020-070	4B/G13/W1/0.5	EG005T: Chromium	7440-47-3	2	mg/kg	55	58	6.3	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	17	19	12.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	30	31	5.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 644750)									
EM0803020-081	4B/G13/W3/1.0	EG005T: Chromium	7440-47-3	2	mg/kg	58	56	3.8	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	81	64	24.1	0% - 50%
		EG005T: Copper	7440-50-8	5	mg/kg	37	35	5.0	No Limit
EM0803020-090	4B/G13/W5/0.5	EG005T: Chromium	7440-47-3	2	mg/kg	53	52	0.0	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	15	16	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	23	23	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 641472)									
EM0802952-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.036	0.035	0.0	0% - 20%
EM0803020-102	4B/RB-18	EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 644745)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	99.3	84.4	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	100	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	105	90.6	121
EG005T: Total Metals by ICP-AES (QCLot: 644746)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	94.0	84.4	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	95.0	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	98.8	90.6	121
EG005T: Total Metals by ICP-AES (QCLot: 644748)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	100	84.4	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	99.1	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	99.0	90.6	121
EG005T: Total Metals by ICP-AES (QCLot: 644749)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	98.8	84.4	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	96.0	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	99.1	90.6	121
EG005T: Total Metals by ICP-AES (QCLot: 644750)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	106	84.4	124
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	104	89.2	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	108	90.6	121

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 641472)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	90.2	88.4	108
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.8	87.6	110
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.8	87.7	106

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries . Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 644745)							
EM0803020-002	4B/G4/W1/0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	92.8	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	97.4	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	101	70	130
EG005T: Total Metals by ICP-AES (QCLot: 644746)							
EM0803020-022	4B/T57/N2/0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	# Not Determined	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	# Not Determined	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	75.6	70	130
EG005T: Total Metals by ICP-AES (QCLot: 644748)							
EM0803020-042	4B/G4/N2/0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	98.6	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	110	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	107	70	130
EG005T: Total Metals by ICP-AES (QCLot: 644749)							
EM0803020-062	4B/G4/E3/0.25	EG005T: Arsenic	7440-38-2	50 mg/kg	90.1	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	91.0	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	96.8	70	130
EG005T: Total Metals by ICP-AES (QCLot: 644750)							
EM0803020-082	4B/G13/W3/1.5	EG005T: Arsenic	7440-38-2	50 mg/kg	79.1	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	87.3	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	96.1	70	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 641472)							
EM0802952-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	103	70	130
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	102	70	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	98.6	70	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **EM0803020**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4B METAL DELINEATION	Page	: 1 of 6
Order number	: 21194		
C-O-C number	: ----	Quote number	: EM2008OTEK0043
Site	: ----		
Sampler	: CB, EB	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 21-APR-2008	Issue Date	: 22-APR-2008 22:49
Client Requested Due Date	: 30-APR-2008	Scheduled Reporting Date	: **30-APR-2008**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 7.1 - 8.0 C - Ice present
No. of coolers/boxes	: ----	No. of samples received	: 104
Sercurity Seal	: Intact.	No. of samples analysed	: 102

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- **Sample containers do not comply to pretreatment / preservation standards (AS, APHA, USEPA). Please refer to the Sample Container(s)/Preservation Non-Compliance Log at the end of this report for details.**
- **Sample(s) have been received within recommended holding times**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method / Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
EG020A-F : Dissolved Metals by ICP-MS - Suite A		
4B/RB-17	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered
4B/RB-18	- Clear Plastic Bottle - Nitric Acid; Unfiltered	- Clear Plastic Bottle - Nitric Acid; Filtered

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES
EM0803020-001	17-APR-2008 15:00	4B/G4/W1/0.1		✓	✓
EM0803020-002	17-APR-2008 15:00	4B/G4/W1/0.25		✓	✓
EM0803020-003	17-APR-2008 15:00	4B/G4/W1/0.5		✓	✓
EM0803020-004	17-APR-2008 15:00	4B/G4/W1/1.0		✓	✓
EM0803020-005	17-APR-2008 15:00	4B/G4/W2/0.1		✓	✓
EM0803020-006	17-APR-2008 15:00	4B/G4/W2/0.25		✓	✓
EM0803020-007	17-APR-2008 15:00	4B/G4/W2/0.5		✓	✓
EM0803020-008	17-APR-2008 15:00	4B/G4/W2/1.0		✓	✓
EM0803020-009	17-APR-2008 15:00	4B/G4/W3/0.1		✓	✓
EM0803020-010	17-APR-2008 15:00	4B/G4/W3/0.25		✓	✓
EM0803020-011	17-APR-2008 15:00	4B/G4/W3/0.5		✓	✓
EM0803020-012	17-APR-2008 15:00	4B/G4/W3/1.0		✓	✓
EM0803020-013	17-APR-2008 15:00	4B/G4/W4/0.1		✓	✓
EM0803020-014	17-APR-2008 15:00	4B/G4/W4/0.25		✓	✓
EM0803020-015	17-APR-2008 15:00	4B/G4/W4/0.5		✓	✓
EM0803020-016	17-APR-2008 15:00	4B/G4/W4/1.0		✓	✓
EM0803020-017	18-APR-2008 15:00	4B/T57/N1/0.25		✓	✓
EM0803020-018	18-APR-2008 15:00	4B/T57/N1/0.5		✓	✓
EM0803020-019	18-APR-2008 15:00	4B/T57/N1/1.0		✓	✓
EM0803020-020	18-APR-2008 15:00	4B/T57/N1/1.5		✓	✓
EM0803020-021	18-APR-2008 15:00	4B/T57/N1/2.0		✓	✓
EM0803020-022	18-APR-2008 15:00	4B/T57/N2/0.25		✓	✓
EM0803020-023	18-APR-2008 15:00	4B/T57/N2/0.5		✓	✓
EM0803020-024	18-APR-2008 15:00	4B/T57/N2/1.0		✓	✓
EM0803020-025	18-APR-2008 15:00	4B/T57/N2/1.5		✓	✓
EM0803020-026	18-APR-2008 15:00	4B/T57/N2/2.0		✓	✓
EM0803020-027	18-APR-2008 15:00	4B/T57/N3/0.25		✓	✓
EM0803020-028	18-APR-2008 15:00	4B/T57/N3/0.5		✓	✓
EM0803020-029	18-APR-2008 15:00	4B/T57/N3/1.0		✓	✓
EM0803020-030	18-APR-2008 15:00	4B/T57/N3/1.5		✓	✓
EM0803020-031	18-APR-2008 15:00	4B/T57/N3/2.0		✓	✓

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES
EM0803020-032	18-APR-2008 15:00	4B/T57/N4/0.25		✓	✓
EM0803020-033	18-APR-2008 15:00	4B/T57/N4/0.5		✓	✓
EM0803020-034	18-APR-2008 15:00	4B/T57/N4/1.0		✓	✓
EM0803020-035	18-APR-2008 15:00	4B/T57/N4/1.5		✓	✓
EM0803020-036	18-APR-2008 15:00	4B/T57/N4/2.0		✓	✓
EM0803020-037	17-APR-2008 15:00	4B/G4/N1/0.1		✓	✓
EM0803020-038	17-APR-2008 15:00	4B/G4/N1/0.25		✓	✓
EM0803020-039	17-APR-2008 15:00	4B/G4/N1/0.5		✓	✓
EM0803020-040	17-APR-2008 15:00	4B/G4/N1/1.0		✓	✓
EM0803020-041	17-APR-2008 15:00	4B/G4/N2/0.1		✓	✓
EM0803020-042	17-APR-2008 15:00	4B/G4/N2/0.25		✓	✓
EM0803020-043	17-APR-2008 15:00	4B/G4/N2/0.5		✓	✓
EM0803020-044	17-APR-2008 15:00	4B/G4/N2/1.0		✓	✓
EM0803020-045	17-APR-2008 15:00	4B/G4/N3/0.1		✓	✓
EM0803020-046	17-APR-2008 15:00	4B/G4/N3/0.25		✓	✓
EM0803020-047	17-APR-2008 15:00	4B/G4/N3/0.5		✓	✓
EM0803020-048	17-APR-2008 15:00	4B/G4/N3/1.0		✓	✓
EM0803020-049	17-APR-2008 15:00	4B/G4/N4/0.1		✓	✓
EM0803020-050	17-APR-2008 15:00	4B/G4/N4/0.25		✓	✓
EM0803020-051	17-APR-2008 15:00	4B/G4/N4/0.5		✓	✓
EM0803020-052	17-APR-2008 15:00	4B/G4/N4/1.0		✓	✓
EM0803020-053	17-APR-2008 15:00	4B/G4/E1/0.1		✓	✓
EM0803020-054	17-APR-2008 15:00	4B/G4/E1/0.25		✓	✓
EM0803020-055	17-APR-2008 15:00	4B/G4/E1/0.5		✓	✓
EM0803020-056	17-APR-2008 15:00	4B/G4/E1/1.0		✓	✓
EM0803020-057	17-APR-2008 15:00	4B/G4/E2/0.1		✓	✓
EM0803020-058	17-APR-2008 15:00	4B/G4/E2/0.25		✓	✓
EM0803020-059	17-APR-2008 15:00	4B/G4/E2/0.5		✓	✓
EM0803020-060	17-APR-2008 15:00	4B/G4/E2/1.0		✓	✓
EM0803020-061	17-APR-2008 15:00	4B/G4/E3/0.1		✓	✓
EM0803020-062	17-APR-2008 15:00	4B/G4/E3/0.25		✓	✓
EM0803020-063	17-APR-2008 15:00	4B/G4/E3/0.5		✓	✓
EM0803020-064	17-APR-2008 15:00	4B/G4/E3/1.0		✓	✓
EM0803020-065	17-APR-2008 15:00	4B/G4/E4/0.1		✓	✓
EM0803020-066	17-APR-2008 15:00	4B/G4/E4/0.25		✓	✓
EM0803020-067	17-APR-2008 15:00	4B/G4/E4/0.5		✓	✓
EM0803020-068	17-APR-2008 15:00	4B/G4/E4/1.0		✓	✓
EM0803020-069	18-APR-2008 15:00	4B/G13/W1/0.25		✓	✓
EM0803020-070	18-APR-2008 15:00	4B/G13/W1/0.5		✓	✓
EM0803020-071	18-APR-2008 15:00	4B/G13/W1/1.0		✓	✓
EM0803020-072	18-APR-2008 15:00	4B/G13/W1/1.5		✓	✓

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EG005T (solids) Total Metals by ICP-AES
EM0803020-073	18-APR-2008 15:00	4B/G13/W1/2.0		✓	✓
EM0803020-074	18-APR-2008 15:00	4B/G13/W2/0.25		✓	✓
EM0803020-075	18-APR-2008 15:00	4B/G13/W2/0.5		✓	✓
EM0803020-076	18-APR-2008 15:00	4B/G13/W2/1.0		✓	✓
EM0803020-077	18-APR-2008 15:00	4B/G13/W2/1.5		✓	✓
EM0803020-078	18-APR-2008 15:00	4B/G13/W2/2.0		✓	✓
EM0803020-079	18-APR-2008 15:00	4B/G13/W3/0.25		✓	✓
EM0803020-080	18-APR-2008 15:00	4B/G13/W3/0.5		✓	✓
EM0803020-081	18-APR-2008 15:00	4B/G13/W3/1.0		✓	✓
EM0803020-082	18-APR-2008 15:00	4B/G13/W3/1.5		✓	✓
EM0803020-083	18-APR-2008 15:00	4B/G13/W3/2.0		✓	✓
EM0803020-084	18-APR-2008 15:00	4B/G13/W4/0.25		✓	✓
EM0803020-085	18-APR-2008 15:00	4B/G13/W4/0.5		✓	✓
EM0803020-086	18-APR-2008 15:00	4B/G13/W4/1.0		✓	✓
EM0803020-087	18-APR-2008 15:00	4B/G13/W4/1.5		✓	✓
EM0803020-088	18-APR-2008 15:00	4B/G13/W4/2.0		✓	✓
EM0803020-089	18-APR-2008 15:00	4B/G13/W5/0.25		✓	✓
EM0803020-090	18-APR-2008 15:00	4B/G13/W5/0.5		✓	✓
EM0803020-091	18-APR-2008 15:00	4B/G13/W5/1.0		✓	✓
EM0803020-092	18-APR-2008 15:00	4B/G13/W5/1.5		✓	✓
EM0803020-093	18-APR-2008 15:00	4B/G13/W5/2.0		✓	✓
EM0803020-094	18-APR-2008 15:00	4B/G13/W6/0.25		✓	✓
EM0803020-095	18-APR-2008 15:00	4B/G13/W6/0.5		✓	✓
EM0803020-096	18-APR-2008 15:00	4B/G13/W6/1.0		✓	✓
EM0803020-097	18-APR-2008 15:00	4B/G13/W6/1.5		✓	✓
EM0803020-098	18-APR-2008 15:00	4B/G13/W6/2.0		✓	✓
EM0803020-099	17-APR-2008 15:00	4B/QS-33		✓	✓
EM0803020-100	17-APR-2008 15:00	4B/QS-34		✓	✓
EM0803020-103	17-APR-2008 15:00	4B/T71/1.2	✓		
EM0803020-104	17-APR-2008 15:00	4B/T72/1.2	✓		

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EG020A-F Dissolved Metals by ICPMS - Suite A
EM0803020-101	17-APR-2008 15:00	4B/RB-17	✓
EM0803020-102	18-APR-2008 15:00	4B/RB-18	✓

Requested Deliverables

MR CHRISTIAN BEASLEY

- *AU Certificate of Analysis - NATA	Email	cbeasley@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	cbeasley@otek.com.au
- *AU QC Report ¿ DEFAULT (Anon QC Rep) - NATA	Email	cbeasley@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	cbeasley@otek.com.au
- Default - Chain of Custody	Email	cbeasley@otek.com.au
- EDI Format - ENMRG	Email	cbeasley@otek.com.au
- EDI Format - ESDAT	Email	cbeasley@otek.com.au

MR GURDEEP KOSHA

- *AU Certificate of Analysis - NATA	Email	gkhosa@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	gkhosa@otek.com.au
- *AU QC Report ¿ DEFAULT (Anon QC Rep) - NATA	Email	gkhosa@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	gkhosa@otek.com.au
- Default - Chain of Custody	Email	gkhosa@otek.com.au
- EDI Format - ENMRG	Email	gkhosa@otek.com.au
- EDI Format - ESDAT	Email	gkhosa@otek.com.au

MR TOM SANTWYK-ANDERSON

- *AU Certificate of Analysis - NATA	Email	tsantwyk-anderson@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	tsantwyk-anderson@otek.com.au
- *AU QC Report ¿ DEFAULT (Anon QC Rep) - NATA	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Tax Invoice	Email	tsantwyk-anderson@otek.com.au
- Default - Chain of Custody	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ENMRG	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ESDAT	Email	tsantwyk-anderson@otek.com.au
- Trigger - Subcontract Report	Email	tsantwyk-anderson@otek.com.au

MS CHANTEL WEBBER

- A4 - AU Tax Invoice	Email	chantelwebber@otek.com.au

MS EMILY BURKE

- *AU Certificate of Analysis - NATA	Email	eburke@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	eburke@otek.com.au
- *AU QC Report ¿ DEFAULT (Anon QC Rep) - NATA	Email	eburke@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	eburke@otek.com.au
- Default - Chain of Custody	Email	eburke@otek.com.au
- EDI Format - ENMRG	Email	eburke@otek.com.au
- EDI Format - ESDAT	Email	eburke@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	vicreception@otek.com.au
- *AU QC Report ¿ DEFAULT (Anon QC Rep) - NATA	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice	Email	vicreception@otek.com.au
- Default - Chain of Custody	Email	vicreception@otek.com.au
- EDI Format - ENMRG	Email	vicreception@otek.com.au
- EDI Format - ESDAT	Email	vicreception@otek.com.au

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OTEK Australia Pty Ltd
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St Kilda, 3182.
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Ph (03) 9525 5155
Fx (03) 9593 8555

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd Springvale 3171
Paul Loewy
8549 9600

PROJECT # 3106004
PROJECT NAME: Werribee Area 4B Metal Delineation
COLLECTORS NAME: Christian Beasley, Emily Burke
cbeasley@otek.com.au, eburke@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL
FINAL REPORT BY: Gurdeep Khosa gkosa@otek.com.au
LAB QUOTE REF: ME/055/08
OTEK PO No.: 21194
REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Arsenic Std	Chromium Std	Copper Std	Pb Std	PAH & Phenols Std	OCP/OPP/PCBs Std	OCP/PCBs Std	OCP Std	OPP/OCP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VCH Std	ON HOLD
~~4B/G4/S1/0.25~~	~~0.25~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S1/0.5~~	~~0.50~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S1/1.0~~	~~1.00~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S1/1.5~~	~~1.50~~			X			X					~~1~~		X	X	X																		
~~4B/G4/S1/2.0~~	~~2.00~~			X			X					~~1~~		X	X	X																		
~~4B/G4/S2/0.1~~	~~0.10~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S2/0.25~~	~~0.25~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S2/0.5~~	~~0.50~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S2/1.0~~	~~1.00~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S2/1.5~~	~~1.50~~			X			X					~~1~~		X	X	X																		
~~4B/G4/S2/2.0~~	~~2.00~~			X			X					~~1~~		X	X	X																		
~~4B/G4/S3/0.1~~	~~0.10~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S3/0.25~~	~~0.25~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S3/0.5~~	~~0.50~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S3/1.0~~	~~1.00~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S3/1.5~~	~~1.50~~			X			X					~~1~~		X	X	X																		
~~4B/G4/S3/2.0~~	~~2.00~~			X			X					~~1~~		X	X	X																		
~~4B/G4/S4/0.1~~	~~0.10~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S4/0.25~~	~~0.25~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S4/0.5~~	~~0.50~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S4/1.0~~	~~1.00~~			X			X				~~16-Apr-08~~	~~1~~		X	X	X																		
~~4B/G4/S4/1.5~~	~~1.50~~			X			X					~~1~~		X	X	X																		
~~4B/G4/S4/2.0~~	~~2.00~~			X			X					~~1~~		X	X	X																		
4B/G4/W1/0.1	0.10			X			X				17-Apr-08	1		X	X	X																		
4B/G4/W1/0.25	0.25			X			X				17-Apr-08	1		X	X	X																		
4B/G4/W1/0.5	0.50			X			X				17-Apr-08	1		X	X	X																		
4B/G4/W1/1.0	1.00			X			X				17-Apr-08	1		X	X	X																		
This Page				27			27					27		27	27	27																		

Environmental Division
Melbourne
Work Order
EM0803020

Telephone : +61-3-8549 9600

STANDARD 1 WEEK TURN AROUND. Results to be supplied in ESDAT format

Relinquished by: Date 21/4/08 Time 3:00 Received by: Date Time
Relinquished by: Date Time Received by: Date Time

Custody Seals Intact? ✓
Samples Received Chilled? ✓

Additional Comments:
* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

7-1-8-0 °C

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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd Springvale 3171
Paul Loewy
8549 9600

PROJECT # 3106004

PROJECT NAME: Werribee Area 4B Metal Delineation

COLLECTORS NAME: Christian Beasley, Emily Burke
cbeasley@otek.com.au, eburke@otek.com.au

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Gurdeep Khosa gkosa@otek.com.au

LAB QUOTE REF: ME/055/08

OTEK PO No.: 21194

REMARKS

PQLs Required (ug/L)

STANDARD 1 WEEK TURN AROUND. Results to be supplied in ESDAT

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Arsenic Std	Chromium Std	Copper Std	Pb Std	PAH & Phenols Std	OCP/OPP/PCBs Std	OCP/PCBs Std	OCP Std	OPP/OCP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VCH Std	ON HOLD
4B/G4/W2/0.1	0.10	5		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W2/0.25	0.25	6		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W2/0.5	0.50	7		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W2/1.0	1.00	8		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W3/0.1	0.10	9		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W3/0.25	0.25	10		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W3/0.5	0.50	11		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W3/1.0	1.00	12		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W4/0.1	0.10	13		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W4/0.25	0.25	14		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W4/0.5	0.50	15		X			X				17-Apr-08	1		X	X	X																			
4B/G4/W4/1.0	1.00	16		X			X				17-Apr-08	1		X	X	X																			
4B/T57/N1/0.25	0.25	17		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N1/0.5	0.50	18		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N1/1.0	1.00	19		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N1/1.5	1.50	20		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N1/2.0	2.00	21		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N2/0.25	0.25	22		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N2/0.5	0.50	23		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N2/1.0	1.00	24		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N2/1.5	1.50	25		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N2/2.0	2.00	26		X			X				18-Apr-08	1		X	X	X																			
	This Page			22			22					22		22	22	22																			

Relinquished by: [signature] Date 21/4/08 Time 8:00 Received by: [signature] 10

Relinquished by: Date Time Received by:

Date Time

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

OTEK AUSTRALIA PTY LTD

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St Kilda, 3182.
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Fx (03) 9593 8555

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd Springvale 3171
Paul Loewy
8549 9600

PROJECT # 3106004

PROJECT NAME: Werribee Area 4B Metal Delineation

COLLECTORS NAME: Christian Beasley, Emily Burke
cbeasley@otek.com.au, eburke@otek.com.au

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Gurdeep Khosa gkosa@otek.com.au

LAB QUOTE REF: ME/055/08

OTEK PO No.: 21194

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	Arsenic Std	Chromium Std	Copper Std	Pb Std	PAH & Phenols Std	OCP/OPP/PCBs Std	OCP/PCBs Std	OCP Std	OPP/OCP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VCH Std	ON HOLD
4B/T57/N3/0.25	0.25	29		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N3/0.5	0.50	28		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N3/1.0	1.00	29		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N3/1.5	1.50	30		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N3/2.0	2.00	31		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N4/0.25	0.25	32		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N4/0.5	0.50	33		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N4/1.0	1.00	34		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N4/1.5	1.50	35		X			X				18-Apr-08	1		X	X	X																			
4B/T57/N4/2.0	2.00	36		X			X				18-Apr-08	1		X	X	X																			
~~4B/G13/E1/0.25~~	~~0.25~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E1/0.5~~	~~0.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E1/1.0~~	~~1.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E1/1.5~~	~~1.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E1/2.0~~	~~2.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E2/0.25~~	~~0.25~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E2/0.5~~	~~0.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E2/1.0~~	~~1.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E2/1.5~~	~~1.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E2/2.0~~	~~2.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E3/0.25~~	~~0.25~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E3/0.5~~	~~0.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E3/1.0~~	~~1.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E3/1.5~~	~~1.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
4B/G13/E3/2.0	~~2.00~~			X			X					1		X	X	X																			
This Page				25			25					25		25	25	25																			

ANALYSIS REQUIRED

STANDARD 1 WEEK TURN AROUND.
Results to be supplied in ESDAT format

PQLs Required (ug/L)

Relinquished by:	Date	Time	Received by:	Date	Time	Custody Seals Intact?
	21/4/08	3:40				
Relinquished by:	**Date**	**Time**	**Received by:**	**Date**	**Time**	Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd Springvale 3171
Paul Loewy
8549 9600

PROJECT #: 3106004
PROJECT NAME: Werribee Area 4B Metal Delineation

COLLECTORS NAME: Christian Beasley, Emily Burke
cbeasley@otek.com.au, eburke@otek.com.au

LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Gurdeep Khosa gkosa@otek.com.au

LAB QUOTE REF: ME/055/08
OTEK PO No.: 21194

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Arsenic	Chromium	Copper	Pb	PAH & Phenols	OCP/OPP/PCBs	OCP/PCBs	OCP	OPP/OCP	CYNIDE & FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	V/C EPA SCREEN	VCH	ON HOLD
														Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	
~~4B/T89/0.25~~	~~0.25~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																				
~~4B/T89/0.5~~	~~0.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/T89/1.0~~	~~1.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/T89/1.5~~	~~1.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/T89/2.0~~	~~2.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/T90/0.25~~	~~0.25~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/T90/0.5~~	~~0.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/T90/1.0~~	~~1.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/T90/1.5~~	~~1.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/T90/2.0~~	~~2.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
4B/G4/N1/0.1	0.10	39		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N1/0.25	0.25	25		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N1/0.5	0.50	39		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N1/1.0	1.00	40		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N2/0.1	0.10	41		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N2/0.25	0.25	42		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N2/0.5	0.50	43		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N2/1.0	1.00	44		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N3/0.1	0.10	45		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N3/0.25	0.25	46		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N3/0.5	0.50	47		X			X				17-Apr-08	1		X	X	X																			
4B/G4/N3/1.0	1.00	48		X			X				17-Apr-08	1		X	X	X																			
This Page				22			22					22		22	22	22																			

STANDARD 1 WEEK TURN AROUND. Results to be supplied in ESDAT format

Relinquished by:	Date	Time	Received by:	Date	Time	
	21/4/08	15:00				Custody Seals Intact?
Relinquished by:	Date	Time	Received by:	Date	Time	
						Samples Received Chilled?

Additional Comments:
* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd Springvale 3171
Paul Loewy
8549 9600

PROJECT #	PROJECT NAME
3106004	Werribee Area 4B Metal Delineation

COLLECTORS NAME: Christian Beasley, Emily Burke
cbeasley@otek.com.au, eburke@otek.com.au

LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Gurdeep Khosa gkosa@otek.com.au

LAB QUOTE REF: ME/055/08 | OTEK PO No.: 21194

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Arsenic Std	Chromium Std	Copper Std	Pb Std	PAH & Phenols Std	OCP/OPP/PCBs Std	OCP/PCBs Std	OCP Std	OPP/OCP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VCH Std	ON HOLD
4B/G4/N4/0.1	0.10			X			X				17-Apr-08	1		X	X	X																			
4B/G4/N4/0.25	0.25			X			X				17-Apr-08	1		X	X	X																			
4B/G4/N4/0.5	0.50			X			X				17-Apr-08	1		X	X	X																			
4B/G4/N4/1.0	1.00			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E1/0.1	0.10			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E1/0.25	0.25			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E1/0.5	0.50			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E1/1.0	1.00			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E2/0.1	0.10			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E2/0.25	0.25			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E2/0.5	0.50			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E2/1.0	1.00			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E3/0.1	0.10			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E3/0.25	0.25			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E3/0.5	0.50			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E3/1.0	1.00			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E4/0.1	0.10			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E4/0.25	0.25			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E4/0.5	0.50			X			X				17-Apr-08	1		X	X	X																			
4B/G4/E4/1.0	1.00			X			X				17-Apr-08	1		X	X	X																			
This Page				20			20					20		20	20	20																			

REMARKS

PQLs Required (ug/L)

STANDARD 1 WEEK TURN AROUND. Results to be supplied in ESDAT format

Relinquished by:	Date	Time	Received by:	Date	Time	Custody Seals Intact?
	21/4/08	1230				
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd Springvale 3171
Paul Loewy
8549 9600

PROJECT #	PROJECT NAME
3106004	Werribee Area 4B Metal Delineation

COLLECTORS NAME: Christian Beasley, Emily Burke
cbeasley@otek.com.au, eburke@otek.com.au

LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Gurdeep Khosa gkosa@otek.com.au

LAB QUOTE REF: ME/055/08 | OTEK PO No.: 21194

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Arsenic Std	Chromium Std	Copper Std	Pb Std	PAH & Phenols Std	OCP/OPP/PCBs Std	OCP/PCBs Std	OCP Std	OPP/OCP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VCH Std	ON HOLD
~~4B/G13/E4/0.25~~	~~0.25~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E4/0.5~~	~~0.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E4/1.0~~	~~1.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E4/1.5~~	~~1.50~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
~~4B/G13/E4/2.0~~	~~2.00~~			~~X~~			~~X~~					~~1~~		~~X~~	~~X~~	~~X~~																			
4B/G13/W1/0.25	0.25			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W1/0.5	0.50			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W1/1.0	1.00			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W1/1.5	1.50			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W1/2.0	2.00			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W2/0.25	0.25			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W2/0.5	0.50			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W2/1.0	1.00			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W2/1.5	1.50			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W2/2.0	2.00			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W3/0.25	0.25			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W3/0.5	0.50			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W3/1.0	1.00			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W3/1.5	1.50			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W3/2.0	2.00			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W4/0.25	0.25			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W4/0.5	0.50			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W4/1.0	1.00			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W4/1.5	1.50			X			X				18-Apr-08	1		X	X	X																			
4B/G13/W4/2.0	2.00			X			X				18-Apr-08	1		X	X	X																			
		This Page		25			25					25		25	25	25																			

STANDARD 1 WEEK TURN AROUND.
Results to be supplied in ESDAT format

PQLs Required (ug/L)

Relinquished by:	Date	Time	Received by:	Date	Time	Custody Seals Intact?
	21/4/08	13:10				
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

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PROJECT #	PROJECT NAME
3106004	Werribee Area 4B Metal Delineation

COLLECTORS NAME: Christian Beasley, Emily Burke
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PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Gurdeep Khosa gkosa@otek.com.au

LAB QUOTE REF:	OTEK PO No.:
ME/055/08	21194

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Arsenic Std	Chromium Std	Copper Std	Pb Std	PAH & Phenols Std	OCP/OPP/PCBs Std	OCP/PCBs Std	OCP Std	OPP/OCP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VOH Std	ON HOLD
PQLs Required (ug/L)																																		
4B/G13/W5/0.25	0.25	89		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W5/0.5	0.50	90		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W5/1.0	1.00	91		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W5/1.5	1.50	92		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W5/2.0	2.00	93		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W6/0.25	0.25	94		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W6/0.5	0.50	95		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W6/1.0	1.00	96		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W6/1.5	1.50	97		X			X				18-Apr-08	1		X	X	X																			
4B/G13/W6/2.0	2.00	98		X			X				18-Apr-08	1		X	X	X																			
This Page				10			10					10		10	10	10																			

STANDARD 1 WEEK TURN AROUND. Results to be supplied in ESDAT format

Relinquished by:	Date	Time	Received by:	Date	Time	Custody Seals Intact?
	21/4/08	13:00				
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

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PROJECT # 3106004 | PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Christian Beasley, Emily Burke
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LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Gurdeep Khosa, gkosa@otek.com.au

LAB QUOTE REF: ME/055/08 | OTEK PO No.: 21194

REMARKS: PQLs Required (ug/L)

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Arsenic Std	Chromium Std	Copper Std	Pb Std	PAH/Phenols Std	OCP/PCBs Std	PHENOLS Std	OCP/OPP Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VCH Std	ON HOLD
~~4B/QS-20~~				X			X					1		X	X	X																	
~~4B/QS-21~~				X			X					1		X	X	X																	
~~4B/QS-22~~				X			X				~~16-Apr-08~~	1		X	X	X																	
~~4B/QS-23~~				X			X				~~16-Apr-08~~	1		X	X	X																	
~~4B/QS-24~~				X			X					1		X	X	X																	
~~4B/QS-25~~				X			X					1		X	X	X																	
~~4B/QS-26~~				X			X					1		X	X	X																	
~~4B/QS-27~~				X			X					1		X	X	X																	
~~4B/QS-28~~				X			X					1		X	X	X																	
~~4B/QS-29~~				X			X					1		X	X	X																	
~~4B/QS-30~~				X			X					1		X	X	X																	
~~4B/QS-31~~				X			X					1		X	X	X																	
~~4B/QS-32~~				X			X					1		X	X	X																	
4B/QS-33		99		X			X				17-Apr-08	1		X	X	X																	
4B/QS-34		100		X			X				17-Apr-08	1		X	X	X																	
~~4B/QS-35~~				X			X				~~16-Apr-08~~	1		X	X	X																	
~~4B/QS-36~~				X			X					1		X	X	X																	
~~4B/RB-16~~				X			X					1		X	X	X																	
4B/RB-17		101		X			X				17-Apr-08	2		X	X	X																	
4B/RB-18		102		X			X				18-Apr-08	3		X	X	X																	
4B/T71/1.2		103		X			X				17-Apr-08	1																					X
4B/T72/1.2		104		X			X				17-Apr-08	1																					X
This Page				22			22					22		20	20	20																	2

Relinquished by: [signature] Date: 21/Apr Time: 5:00 Received by: [signature] 10

Relinquished by: Date: Time: Received by: TNT Date: 21/4/8 Time: 5:01 PM.

Custody Seals Intact?

Samples Received Chilled? 8.0 °C

STANDARD 1 WEEK TURN AROUND. Results to be supplied in ESDAT format

Additional Comments:
* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

From: Sarah Hodgson
To: Catherine Crilly
Subject: RE: RPD error
Date: Thursday, 10 March 2011 5:01:57 PM

Hi Catherine,

Our LIMS department have looked at this query, and I've informed me that the reported RPD values are correct. There are 2 reasons for this.

The first is that the RPD values presented in the report are calculated from the raw data, not the rounded data included in the reports. This is applicable to the samples where you have queried a result that is not 0.0%, but an actual number. If you would like, I can find the raw data for you to present the calculations?

The second, where you have queried RPD values of 0.0%, this is a product of the rule used to validate the RPD data. In work order EM0802745, on page 3 of the QC report, the following statement is written:

"The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates … are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit".

During the QC process, the system looks at the highest value of either the Duplicate and the Primary sample, and if the result is lower than 10 times the LOR then it does not calculate an RPD. For example, sample #001 from EM0802745 – the Arsenic results were 5mg/kg for the Primary and 6mg/kg for the DUP. Since the LOR is 5mg/kg, and the highest concentration of Arsenic in these samples is below 10 times the LOR (in this case below 50mg/kg) no RPD has been calculated.

Each analysis (and element) has a different LOR, so you will need to check the sample concentrations against the LOR for that compound.

Please let me know if this makes sense, or if you need me to better explain it.

Thanks Catherine,

Regards,

How was your customer experience? Please send us your feedback

Sarah Hodgson

PROJECT MANAGER

ALS | Environmental (General Environmental Group)

Address
4 Westall Road
Springvale VIC 3171

PHONE +61 3 8549 9600
FAX +61 3 8549 9601

www.alsglobal.com

From: Catherine Crilly [mailto:CCrilly@otek.com.au]
Sent: Tuesday, 8 March 2011 12:45 PM
To: Sarah Hodgson
Subject: RPD error

Hi Sarah, below is a table of errors our auditor has found.

EM0802745, EM0803020 and EM0802914. In addition to the miscalculations there have been several cases where there are RPDs calculated as 0.0%, when the primary and duplicate result have not been identical? The following list is an example of the RPDs checked (this is not an inclusive list of errors encountered):

Report No.	Page # in Report	Analyte	Primary Result (mg/kg)	Duplicate Result (mg/kg)	RPD in lab report	RPD check
EM0802745	80 of 163	Cobalt	9	10	14.2%	10.5

		Arsenic	5	6	0.0%	18.2
	81 of 163	zinc	27	28	0.0%	3.6
		Cobalt	13	12	0.0%	8.0
		Manganese	316	299	5.5%	5.5
		Barium	60	70	0.0%	15.4
	82 of 163	Chromium	30	29	3.8%	3.4
		Cobalt	9	8	0.0%	11.8
	83of 163	Lead	10	12	21.9%	18.2
	84 of 163	Vanadium	60	48	21.6%	22.2
	85 of 163	Vanadium	39	38	0.0%	2.6
	86 of 163	Fluoride	400	410	3.7%	2.5
EM0802914	9 of 24	Manganese	13	22	49.9%	51.4
		Vanadium	25	24	4.4%	4.1
	10 of 24	Cobalt	10	11	0.0%	9.5
		Vanadium	32	33	0.0%	3.1
		Manganese	523	531	1.5%	1.5
EM0803020	39 of 50	Chromium	24	25	4.9%	4.1
		Chromium	35	36	0.0%	2.8
		Arsenic	8	9	14.9%	11.8
		Arsenic	6	7	0.0%	15.4
	40 of 50	Arsenic	81	64	24.1%	23.4
		Arsenic	15	16	0.0%	6.5

Kind regards,

Catherine Crilly - Casual Environmental Scientist

Practical Environmental Solutions

T: 03 9095 1943 (Direct) **T:** 03 9525 5155 (Switch) **F:** 03 9593 8555

E: ccrilly@otek.com.au **W:** www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

DATA VALIDATION REPORT

Project Name:	Werribee Area 4, Sub-Area 4A	**Validation Conducted by:**	KJB
Project Number:	3106004	**Signed & Dated:**	18/05/2010
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	Labmark/Amdel	**Secondary Laboratory:**	ALS	**Soil**
Batch Number:	09ENME0005084	**Batch Number:**	EM0901295	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
11	1	1	2

Have the Following Criteria Been Met? (Shade)

Blind Replicate	**OK if >5%**	18.182
Split Sample	**OK if >5%**	18.182
Blank Samples	**OK**	2

1	Rinsate
0	Field
1	Trip

Explain any Discrepancies:

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		**Field Secondary Duplicates (Split)**	
1	**Number obtained**	**1**	
4A/QS-12	**Sample Identification**	**4A/QS-12A**	
18	**Total Number of Analytes**	18	**B**
2	**No. of analytes with RPD >50% (Fail)**	3	
16	**Number of analytes <50% (Pass)**	15	
88.9	**% Pass**	83.3	
A			

Explain any Discrepancies:

4A/QS-12 exceedences for Cobolt and Mercury with RPD's 90% and 100% respectively.

4A/QS-12A exceedences of Boron, Cobolt and Mercury with RPD's of 183%, 70%, 108% respectively.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	**Field**	**Rinsate**
Total Number	1		1
Sample Identifictaion	4A/TB-11		4A/RB-11
Number of Analytes	18		18
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Validation Conducted by: KJB

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	19	3
	No. Fails	0	0
Analysis	**No. Passes**	22	4
	No. Fails	0	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	**F**	**G**
	Primary	**Secondary**
TOTAL # Analytes of DUP Samples	25	40
# samples RPD >50% **(FAIL)**	0	0
% Pass	100	100

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Method Blank Analysis (MB)	**H**	**I**
	Primary	**Secondary**
TOTAL # Analytes	222	18
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery	**J**	**K**
(LCS, LS)	**Primary**	**Secondary**
TOTAL # Analytes	150	9
# analytes outside range i.e <70% or >130% **(FAIL)**	2	0
% Pass	99	100

Surrogates

OK (>95%)	99
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	**L**	**M**
	Primary	**Secondary**
TOTAL # Analytes	18	11
# Analytes outside range i.e <70% or >130%	0	0
% Pass	100	100

Internal Spikes

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Matrix Spike not determined for Zinc and Manganese for 4A/QS-12A because background levels were greater than or equal to 4 times the spike level

FINAL DATA

	Sample Type	**Total Data Quality Objective Fails**	**Total Number of Results**	**% Data Quality Objective Passes**
A	**Primary Duplicates**	2	18	88.9
B	**Secondary Duplicates**	3	18	83.3
C	**Trip Blanks**	0	18	100.0
D	**Field Blanks**	0	0	-
E	**Rinsate Blanks**	0	18	100.0
F & G	**Lab Internal Duplicates**	0	65	100.0
H & I	**Lab Method Blanks**	0	240	100.0
J & K	**Lab Internal Spike Recoveries**	2	159	98.7
L & M	**Laboratory Spike Recoveries**	0	29	100.0
	Total	**7**	**565**	**98.8**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) LUKE DALLAGO
SIGNATURE
DATE 30-4-09

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0901295**	Page	: 1 of 3
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - Werribee Area 4 Asbestos Pipe Removal	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 39467		
C-O-C number	: —	Date Samples Received	: 13-FEB-2009
Sampler	: CB, KB	Issue Date	: 20-FEB-2009
Site	: —		
		No. of samples received	: 1
Quote number	: —	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/QS-12A	----	----	----	----
				Client sampling date / time: 13-FEB-2009 15:00	----	----	----	----
				EM0901295-001	----	----	----	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**7.1**	----	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**3.5**	----	----	----	----
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
Arsenic	7440-38-2	5	mg/kg	**6**	----	----	----	----
Barium	7440-39-3	10	mg/kg	**60**	----	----	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**38**	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	**14**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**17**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**10**	----	----	----	----
Manganese	7439-96-5	5	mg/kg	**187**	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**29**	----	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg	**39**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**35**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----

QUALITY CONTROL REPORT

Work Order	: **EM0901295**	Page	: 1 of 6
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - Werribee Area 4 Asbestos Pipe Removal	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 13-FEB-2009
Sampler	: CB, KB	Issue Date	: 20-FEB-2009
Order number	: 39467		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 892317)									
EM0901292-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	8.1	8.1	0.0	0% - 20%
EM0901294-004	Anonymous	EA002: pH Value	----	0.1	pH Unit	9.2	9.2	0.0	0% - 20%
EA055: Moisture Content (QC Lot: 892420)									
EM0901293-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	2.4	2.0	19.4	No Limit
EM0901294-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.1	12.5	3.3	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 892974)									
EM0901291-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	170	180	6.3	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	21	26	18.4	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	11	13	12.2	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	37	42	13.3	0% - 20%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	33	40	18.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	52	60	15.3	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	313	313	0.0	0% - 20%
		EG005T: Manganese	7439-96-5	5	mg/kg	234	279	17.4	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	9	10	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	29	29	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	241	271	11.8	0% - 20%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EP0900767-006	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	<10	<10	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	<5	<5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 892974) - continued									
EP0900767-006	Anonymous	EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 892975)									
EM0901291-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.5	0.6	28.0	No Limit
EP0900767-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 892974)								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	103	82.8	119
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	110	89	119
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	92.8	85.4	117
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	105	87.6	116
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	106	85.5	116
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	102	85.4	115
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	96.9	86.6	113
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	100	81.3	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 892975)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	90.4	71.9	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 892974)							
EM0901291-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	101	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	122	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	101	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.1	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	96.4	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	129	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	118	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	73.1	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.4	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	83.8	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	94.5	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	# Not Determined	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 892975)							
EM0901291-002	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	101	70	130

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0901295**	Page	: 1 of 5
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - Werribee Area 4 Asbestos Pipe Removal	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 13-FEB-2009
Sampler	: CB, KB	Issue Date	: 20-FEB-2009
Order number	: 39467		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils)							
Soil Glass Jar - Unpreserved 4A/QS-12A	**13-FEB-2009**	**18-FEB-2009**	20-FEB-2009	✓	**18-FEB-2009**	18-FEB-2009	✓
EA055: Moisture Content							
Soil Glass Jar - Unpreserved 4A/QS-12A	**13-FEB-2009**	**----**	----	----	**16-FEB-2009**	20-FEB-2009	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved 4A/QS-12A	**13-FEB-2009**	**18-FEB-2009**	12-AUG-2009	✓	**19-FEB-2009**	12-AUG-2009	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved 4A/QS-12A	**13-FEB-2009**	**18-FEB-2009**	12-AUG-2009	✓	**19-FEB-2009**	13-MAR-2009	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	12	**16.7**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	12	**16.7**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (1999) Schedule B(3) (Method 103)
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EM0901291-002	Anonymous	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0901291-002	Anonymous	**Zinc**	7440-66-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- **No Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

PLEASE FORWARD TO ALS

Page 1 of 1

OTEK AUSTRALIA PTY LTD

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd Springvale 3171
Paul Loewy
8549 9600

PROJECT # 3106004

PROJECT NAME: Werribee Area 4 Asbestos Pipe Removal

COLLECTORS NAME: Christian Beasley, Kayne Begble
cbeasley@otek.com.au, kbegble@otek.com.au

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT TO: Tom Santywk-Anderson, tsantywk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08

OTEK PO No.: 39467

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Metals (see below) Std	Chromium Std	Copper Std	Pb Std	ZINC Std	Nickel Std	OCP/PCBs Std	OCP Std	OPP/OCP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	NITRITE Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VOH Std	ON HOLD
4A/QS-12A				X			X				13/02/09			X												X								

PQLs Required (ug/L)

Environmental Division
Melbourne
Work Order
EM0901295

Telephone : +61-3-8549 9600

1 week turnaround

RESULTS IN ESDAT FORMAT PLEASE

This Page

Relinquished by	Date	Time	Received by:	Date	Time	Custody Seals Intact?
	13/2/09	11				
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?
	13/2/09	18:25	PATRICK	13/2/09	20:00	

Additional Comments:
* Metals Include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

6 PAC

DATA VALIDATION REPORT

Project Name:	Werribee Infrastructure Removal Works	**Validation Conducted by:**	MAM
Project Number:	3106004	**Signed & Dated:**	25/08/2009
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	ALS	**Secondary Laboratory:**	N/A	**Soil**
Batch Number:	EM0906990	**Batch Number:**	N/A	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
5	1	0	1

Have the Following Criteria Been Met? (Shade)

Explain any Discrepancies:

Blind Replicate	**OK if >5%**	20	**NOT OK if <5%**	
Split Sample	**OK if >5%**	0	**NOT OK if <5%**	QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.
Blank Samples	**OK**	1	**NOT OK**	

0	Rinsate
0	Field
1	Trip

Refer to OTEK QA/QC results table

	Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	1	**Number obtained**	**0**	
	4A/VS/QS-1	**Sample Identification**	N/A	
A	39	**Total Number of Analytes**	0	**B**
	1	**No. of analytes with RPD >50% (Fail)**	0	
	38	**Number of analytes <50% (Pass)**	0	
	97.4	**% Pass**		

Explain any Discrepancies:

4A/VS/QS-1 RPD exceedence for mercury of 133%

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	1		0
Sample Identifictaion	4A/TB-13		
Number of Analytes	13		
No. Analytes >PQL **(FAIL)**	0		
% Pass	100.00		
	C	**D**	**E**

Explain any Discrepancies:

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	10	
	No. Fails	0	
Analysis	**No. Passes**	14	
	No. Fails	0	

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

DATA VALIDATION REPORT

Project Name: Werribee Infrastructure Removal Works

Validation Conducted by: MAM

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	120	
# samples RPD >50% **(FAIL)**	3	
% Pass	98	

Laboratory Duplicate RPDs

OK (>95%)	98
NOT OK (<95%)	

Explanation for Failures:

RPDs >50% for Benzo(b)fluoranthene, Benzo(k)fluoranthene and Acenaphthylene.

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	70	
# Analytes with RPD >PQL **(FAIL)**	0	
% Pass	100	

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	66	
# analytes outside range i.e <70% or >130% **(FAIL)**	0	
% Pass	100	

Surrogates

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	44	
# Analytes outside range i.e <70% or >130%	5	
% Pass	89	

Internal Spikes

OK (>95%)	89
NOT OK (<95%)	

Explanation for Failures:

5 spike recovery percentages were less than 70%, yet all of these were still within acceptable laboratory limits for the particular analytes.

FINAL DATA

	Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
A	Primary Duplicates	1	39	97.4
B	Secondary Duplicates	0	0	-
C	Trip Blanks	0	13	100.0
D	Field Blanks	0	0	-
E	Rinsate Blanks	0	0	-
F & G	Lab Internal Duplicates	3	120	97.5
H & I	Lab Method Blanks	0	70	100.0
J & K	Lab Internal Spike Recoveries	0	66	100.0
L & M	Laboratory Spike Recoveries	5	44	88.6
	Total	**9**	**352**	**97.4**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

OTEK Australia
INSPECTION VERIFICATION RECORD
PASS ✓ FAIL
NAME (Print) CATHERINE CRILLY
SIGNATURE
DATE 7/8/11

Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0906990**	Page	: 1 of 8
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0042	Date Samples Received	: 27-JUL-2009
Sampler	: CB	Issue Date	: 04-AUG-2009
Order number	: 40063		
		No. of samples received	: 7
Quote number	: ME/281/09	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **Asbestos analysis was subcontracted to ASET.**
- **Where MPN = Most Probable Number**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/T5/VS-1	4A/T5/VS-2	4A/T5/VS-3	4A/T5/VS-4	4A/T5/VS-5
				Client sampling date / time: 27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00
				EM0906990-001	EM0906990-002	EM0906990-003	EM0906990-004	EM0906990-005
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	**8.5**	----	**9.1**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**7.6**	**6.5**	**9.3**	**10.2**	**11.4**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**8**	**6**	**5**	**6**	**6**
Barium	7440-39-3	10	mg/kg	**60**	**70**	**90**	**70**	**90**
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	**1**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**38**	**32**	**28**	**36**	**30**
Cobalt	7440-48-4	2	mg/kg	**15**	**12**	**12**	**13**	**12**
Copper	7440-50-8	5	mg/kg	**22**	**18**	**17**	**19**	**15**
Lead	7439-92-1	5	mg/kg	**13**	**10**	**13**	**12**	**13**
Manganese	7439-96-5	5	mg/kg	**313**	**258**	**264**	**236**	**206**
Nickel	7440-02-0	2	mg/kg	**41**	**35**	**29**	**35**	**29**
Vanadium	7440-62-2	5	mg/kg	**41**	**35**	**35**	**39**	**41**
Zinc	7440-66-6	5	mg/kg	**51**	**44**	**35**	**43**	**22**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	**0.1**	<0.1	**0.2**	<0.1	<0.1
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	----	----	<20	----	<20
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N (Sol.)	----	0.100	mg/kg	----	<0.100	----	----	<0.100
EK058G: Nitrate as N by Discrete Analyser								
^ Nitrate as N (Sol.)	----	0.100	mg/kg	----	**0.206**	----	----	<0.100
EK059G: NOX as N by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.100	mg/kg	----	**0.206**	----	----	<0.100
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/T5/VS-1	4A/T5/VS-2	4A/T5/VS-3	4A/T5/VS-4	4A/T5/VS-5
				Client sampling date / time: 27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00
				EM0906990-001	EM0906990-002	EM0906990-003	EM0906990-004	EM0906990-005
EP068A: Organochlorine Pesticides (OC) - Continued								
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	<0.2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	----	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	----	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	----	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	----	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	----	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	----	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	----	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	----	----	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	<100
MW008: Faecal Coliforms & E.coli by MPN								
Faecal Coliforms	----	-	MPN/g	----	<3	----	----	<3
Escherichia coli	----	-	MPN/g	----	<3	----	----	<3
EP068S: Organochlorine Pesticide Surrogate								

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/T5/VS-1	4A/T5/VS-2	4A/T5/VS-3	4A/T5/VS-4	4A/T5/VS-5
				Client sampling date / time: 27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00	27-JUL-2009 15:00
				EM0906990-001	EM0906990-002	EM0906990-003	EM0906990-004	EM0906990-005
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.1	%	**85.7**	----	----	----	**83.9**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**83.6**	----	----	----	**82.4**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	----	----	**91.1**	**87.2**
2-Chlorophenol-D4	93951-73-6	0.1	%	----	----	----	**101**	**96.9**
2.4.6-Tribromophenol	118-79-6	0.1	%	----	----	----	**92.9**	**88.0**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	----	----	**95.2**	**91.7**
Anthracene-d10	1719-06-8	0.1	%	----	----	----	**92.7**	**83.7**
4-Terphenyl-d14	1718-51-0	0.1	%	----	----	----	**105**	**103**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**89.6**	----	----	----	**86.8**
Toluene-D8	2037-26-5	0.1	%	**91.8**	----	----	----	**89.4**
4-Bromofluorobenzene	460-00-4	0.1	%	**95.5**	----	----	----	**94.8**

Analytical Results

Sub-Matrix: SOIL				Client sample ID	4A/VS/QS-1	----	----	----	----
				Client sampling date / time	27-JUL-2009 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM0906990-006	----	----	----	----
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		10.3	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		7	----	----	----	----
Barium	7440-39-3	10	mg/kg		110	----	----	----	----
Beryllium	7440-41-7	1	mg/kg		1	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		35	----	----	----	----
Cobalt	7440-48-4	2	mg/kg		18	----	----	----	----
Copper	7440-50-8	5	mg/kg		17	----	----	----	----
Lead	7439-92-1	5	mg/kg		15	----	----	----	----
Manganese	7439-96-5	5	mg/kg		279	----	----	----	----
Nickel	7440-02-0	2	mg/kg		32	----	----	----	----
Vanadium	7440-62-2	5	mg/kg		46	----	----	----	----
Zinc	7440-66-6	5	mg/kg		25	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		0.5	----	----	----	----
EK055: Ammonia as N									
Ammonia as N	7664-41-7	20	mg/kg		<20	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/VS/QS-1	----	----	----	----
				Client sampling date / time: 27-JUL-2009 15:00	----	----	----	----
				EM0906990-006	**----**	**----**	**----**	**----**
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**80.2**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**78.2**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**85.5**	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	**89.7**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	**92.1**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/TB-13	----	----	----	----
				Client sampling date / time: 27-JUL-2009 15:00	----	----	----	----
				EM0906990-007	**----**	**----**	**----**	**----**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----
Barium	7440-39-3	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	130
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	53	140
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	19	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	70	130
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	130

QUALITY CONTROL REPORT

Work Order	: **EM0906990**	Page	: 1 of 11
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0042	Date Samples Received	: 27-JUL-2009
Sampler	: CB	Issue Date	: 04-AUG-2009
Order number	: 40063		
		No. of samples received	: 7
Quote number	: ME/281/09	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Jennifer Correa	Analyst	Microbiology
Nancy Wang	Instrument Chemist	Organics
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics
Terrance Hettipathirana	Team Leader - Metals	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 1054385)									
EM0906990-003	4A/T5/VS-3	EA002: pH Value	----	0.1	pH Unit	8.5	8.5	0.0	0% - 20%
EM0907031-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.4	6.4	0.0	0% - 20%
EA055: Moisture Content (QC Lot: 1054336)									
EM0906990-001	4A/T5/VS-1	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.6	7.3	3.7	No Limit
EM0906994-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.0	11.9	7.3	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 1054377)									
EM0906990-001	4A/T5/VS-1	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	60	60	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	38	35	8.6	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	15	13	14.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	41	37	10.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	15.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	20	9.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	11	14.3	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	313	261	18.0	0% - 20%
		EG005T: Vanadium	7440-62-2	5	mg/kg	41	37	11.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	51	46	9.4	No Limit
EM0907000-004	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	50	60	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	14	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	3	2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	7	5	32.4	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	106	98	8.5	0% - 50%
		EG005T: Copper	7440-50-8	5	mg/kg	986	949	3.8	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	3190	3070	4.0	0% - 20%
		EG005T: Manganese	7439-96-5	5	mg/kg	2000	2120	5.7	0% - 20%
		EG005T: Vanadium	7440-62-2	5	mg/kg	16	17	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	2680	2900	8.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1054378)									
EM0906990-001	4A/T5/VS-1	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.0	No Limit
EM0907000-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK055: Ammonia as N (QC Lot: 1057130)									
EM0906990-003	4A/T5/VS-3	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1054383)									
EM0906990-002	4A/T5/VS-2	EK057G: Nitrite as N (Sol.)	----	0.100	mg/kg	<0.100	<0.100	0.0	No Limit
EK059G: NOX as N by Discrete Analyser (QC Lot: 1054384)									
EM0906990-002	4A/T5/VS-2	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.100	mg/kg	0.206	0.180	13.6	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1054357)									
EM0906999-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1055693)									
EM0907089-004	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	0.8	44.8	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	2.0	4.1	70.7	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	0.8	45.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	8.8	13.0	# 37.9	0% - 20%
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	3.4	4.6	29.5	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	24.6	33.0	# 29.0	0% - 20%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	23.0	30.2	# 27.3	0% - 20%
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	13.1	17.9	# 30.8	0% - 20%
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	11.4	13.7	18.7	0% - 20%
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	13.8	19.3	# 32.9	0% - 20%
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	4.3	5.0	13.9	0% - 50%
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	11.9	15.7	# 27.2	0% - 20%

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1055693) - continued									
EM0907089-004	Anonymous	EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	6.8	9.4	32.5	0% - 50%
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	2.0	2.8	33.2	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	8.3	11.6	# 32.7	0% - 20%
EM0907089-006	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	0.8	0.6	28.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	1.3	1.6	20.6	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	0.9	0.9	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	1.4	1.2	12.5	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	9.6	9.3	3.2	0% - 50%
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	5.0	5.7	12.3	0% - 50%
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	32.3	41.1	# 24.0	0% - 20%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	32.1	39.3	# 20.1	0% - 20%
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	18.8	24.6	# 26.4	0% - 20%
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	19.0	20.2	5.7	0% - 20%
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	24.6	41.0	# 50.1	0% - 20%
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	21.0	9.8	# 73.1	0% - 50%
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	27.6	32.7	17.1	0% - 20%
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	19.0	22.2	15.5	0% - 20%
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	7.1	4.7	41.2	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	22.6	26.6	15.9	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1053444)									
EM0906994-038	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM0906999-005	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1055692)									
EM0907089-004	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	340	510	41.5	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	280	440	42.7	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM0907089-006	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	770	660	16.4	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	850	800	6.2	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 1055036)									
EM0906668-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.044	0.044	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 1055036) - continued									
EM0906668-001	Anonymous	EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.044	0.044	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EM0906668-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.044	0.043	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.044	0.042	5.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1054593)									
EM0906990-007	4A/TB-13	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM0907059-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1054377)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	94.2	82.8	119
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	96.9	89	119
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	93.5	85.4	117
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	96.1	87.6	116
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	93.1	85.5	116
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	94.2	85.4	115
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	99.3	86.6	113
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	92.3	81.3	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1054378)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	114	71.9	119
EK055: Ammonia as N (QCLot: 1057130)								
EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	25 mg/kg	96.6	81.7	109
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1054383)								
EK057G: Nitrite as N (Sol.)	----	0.1	mg/kg	<0.100	2.5 mg/kg	104	89.2	104
EK059G: NOX as N by Discrete Analyser (QCLot: 1054384)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.100	2.5 mg/kg	104	75.4	119
EP068A: Organochlorine Pesticides (OC) (QCLot: 1054357)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	91.6	47.3	130
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	92.2	45.6	128
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	74.0	55.9	130
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	99.8	51.1	129
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	98.7	56.1	127
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	94.8	51.6	125
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	101	54.9	121
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	98.0	56.9	122
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	98.5	57.9	122
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	101	56.6	128
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	99.2	57.1	123
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	86.8	56	123
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	98.4	58.4	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1054357) - continued								
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	104	57.9	128
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	110	60.6	128
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	100	55.7	126
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	# 128	47.1	123
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	102	57.2	128
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	90.4	52.5	134
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	105	57.7	126
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	107	53.4	139
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1055693)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	10 mg/kg	95.4	77	117
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	10 mg/kg	101	75	121
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	10 mg/kg	99.7	79	117
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	10 mg/kg	91.6	73	125
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	10 mg/kg	92.1	77	115
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	10 mg/kg	98.0	79	117
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	10 mg/kg	94.1	79	115
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	10 mg/kg	95.5	79	115
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	10 mg/kg	93.5	76	116
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	10 mg/kg	92.7	78	116
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	10 mg/kg	88.2	70	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	10 mg/kg	75.5	69	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	10 mg/kg	88.8	72	118
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	10 mg/kg	85.8	71	119
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	10 mg/kg	85.1	71	119
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	10 mg/kg	82.2	69	119
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1053444)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	32 mg/kg	113	81	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055692)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	606 mg/kg	73.5	69	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	1460 mg/kg	97.3	69	127
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	342 mg/kg	92.1	70	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1055036)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.5	85	111
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	95.3	74	122
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	98.6	82	122

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 1055036) - continued								
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.4	90	114
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.2	86	114
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	102	83	117
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.1	88	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	92	114
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	88	112
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	86	116
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	99.8	85	117
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.2	81	119
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1054593)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	79.1	76	126

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1054377)							
EM0906990-002	4A/T5/VS-2	EG005T: Arsenic	7440-38-2	50 mg/kg	87.5	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	113	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	98.0	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.3	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	93.5	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	99.0	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	96.6	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.8	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	92.7	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	91.1	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1054378)							
EM0906990-002	4A/T5/VS-2	EG035T: Mercury	7439-97-6	5.0 mg/kg	76.9	70	130
EK055: Ammonia as N (QCLot: 1057130)							
EM0906990-005	4A/T5/VS-5	EK055: Ammonia as N	7664-41-7	100 mg/kg	93.2	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1054383)							
EM0906990-005	4A/T5/VS-5	EK057G: Nitrite as N (Sol.)	----	2.5 mg/kg	126	70	130
EK059G: NOX as N by Discrete Analyser (QCLot: 1054384)							
EM0906990-005	4A/T5/VS-5	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.5 mg/kg	114	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1054357)							
EM0906990-005	4A/T5/VS-5	EP068: gamma-BHC	58-89-9	0.25 mg/kg	65.8	45	133
		EP068: Heptachlor	76-44-8	0.25 mg/kg	65.2	40	128
		EP068: Aldrin	309-00-2	0.25 mg/kg	64.9	45	126
		EP068: Dieldrin	60-57-1	0.25 mg/kg	67.7	50	126
		EP068: Endrin	72-20-8	0.25 mg/kg	76.7	46	134
		EP068: 4.4`-DDT	50-29-3	0.25 mg/kg	58.0	35	135
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1055693)							
EM0906994-038	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	105	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	111	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1053444)							
EM0906999-001	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	94.1	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055692)							
EM0906990-005	4A/T5/VS-5	EP071: C10 - C14 Fraction	----	606 mg/kg	70.8	60	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055692) - continued							
EM0906990-005	4A/T5/VS-5	EP071: C15 - C28 Fraction	----	1460 mg/kg	94.4	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	89.3	60	130

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1055036)							
EM0906668-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	102	70	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	98.1	70	130
		EG020A-T: Barium	7440-39-3	1 mg/L	101	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	100	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.4	70	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	101	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	99.6	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	97.0	70	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.4	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	70	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	102	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.6	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1054593)							
EM0906992-004	Anonymous	EG035T: Mercury	7439-97-6	0.0100 mg/L	77.8	70	130

QUALITY CONTROL REPORT

Work Order	: **EM0906990**	Page	: 1 of 11
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0042	Date Samples Received	: 27-JUL-2009
Sampler	: CB	Issue Date	: 04-AUG-2009
Order number	: 40063		
		No. of samples received	: 7
Quote number	: ME/281/09	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Jennifer Correa	Analyst	Microbiology
Nancy Wang	Instrument Chemist	Organics
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics
Terrance Hettipathirana	Team Leader - Metals	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 1054385)									
EM0906990-003	4A/T5/VS-3	EA002: pH Value	----	0.1	pH Unit	8.5	8.5	0.0	0% - 20%
EM0907031-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.4	6.4	0.0	0% - 20%
EA055: Moisture Content (QC Lot: 1054336)									
EM0906990-001	4A/T5/VS-1	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	7.6	7.3	3.7	No Limit
EM0906994-007	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.0	11.9	7.3	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 1054377)									
EM0906990-001	4A/T5/VS-1	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	60	60	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	38	35	8.6	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	15	13	14.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	41	37	10.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	7	15.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	20	9.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	11	14.3	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	313	261	18.0	0% - 20%
		EG005T: Vanadium	7440-62-2	5	mg/kg	41	37	11.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	51	46	9.4	No Limit
EM0907000-004	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	50	60	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	14	14	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	3	2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	7	5	32.4	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	106	98	8.5	0% - 50%
		EG005T: Copper	7440-50-8	5	mg/kg	986	949	3.8	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	3190	3070	4.0	0% - 20%
		EG005T: Manganese	7439-96-5	5	mg/kg	2000	2120	5.7	0% - 20%
		EG005T: Vanadium	7440-62-2	5	mg/kg	16	17	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	2680	2900	8.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1054378)									
EM0906990-001	4A/T5/VS-1	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.0	No Limit
EM0907000-004	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK055: Ammonia as N (QC Lot: 1057130)									
EM0906990-003	4A/T5/VS-3	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1054383)									
EM0906990-002	4A/T5/VS-2	EK057G: Nitrite as N (Sol.)	----	0.100	mg/kg	<0.100	<0.100	0.0	No Limit
EK059G: NOX as N by Discrete Analyser (QC Lot: 1054384)									
EM0906990-002	4A/T5/VS-2	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.100	mg/kg	0.206	0.180	13.6	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1054357)									
EM0906999-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1055693)									
EM0907089-004	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	0.8	44.8	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	2.0	4.1	70.7	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	0.8	45.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	8.8	13.0	# 37.9	0% - 20%
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	3.4	4.6	29.5	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	24.6	33.0	# 29.0	0% - 20%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	23.0	30.2	# 27.3	0% - 20%
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	13.1	17.9	# 30.8	0% - 20%
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	11.4	13.7	18.7	0% - 20%
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	13.8	19.3	# 32.9	0% - 20%
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	4.3	5.0	13.9	0% - 50%
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	11.9	15.7	# 27.2	0% - 20%

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1055693) - continued									
EM0907089-004	Anonymous	EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	6.8	9.4	32.5	0% - 50%
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	2.0	2.8	33.2	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	8.3	11.6	# 32.7	0% - 20%
EM0907089-006	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	0.8	0.6	28.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	1.3	1.6	20.6	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	0.9	0.9	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	1.4	1.2	12.5	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	9.6	9.3	3.2	0% - 50%
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	5.0	5.7	12.3	0% - 50%
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	32.3	41.1	# 24.0	0% - 20%
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	32.1	39.3	# 20.1	0% - 20%
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	18.8	24.6	# 26.4	0% - 20%
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	19.0	20.2	5.7	0% - 20%
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	24.6	41.0	# 50.1	0% - 20%
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	21.0	9.8	# 73.1	0% - 50%
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	27.6	32.7	17.1	0% - 20%
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	19.0	22.2	15.5	0% - 20%
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	7.1	4.7	41.2	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	22.6	26.6	15.9	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1053444)									
EM0906994-038	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM0906999-005	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1055692)									
EM0907089-004	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	340	510	41.5	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	280	440	42.7	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM0907089-006	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	770	660	16.4	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	850	800	6.2	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 1055036)									
EM0906668-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.044	0.044	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 1055036) - continued									
EM0906668-001	Anonymous	EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.044	0.044	0.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EM0906668-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.044	0.043	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.044	0.042	5.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1054593)									
EM0906990-007	4A/TB-13	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM0907059-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1054377)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	94.2	82.8	119
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	96.9	89	119
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	93.5	85.4	117
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	96.1	87.6	116
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	93.1	85.5	116
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	94.2	85.4	115
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	99.3	86.6	113
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	92.3	81.3	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1054378)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	114	71.9	119
EK055: Ammonia as N (QCLot: 1057130)								
EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	25 mg/kg	96.6	81.7	109
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1054383)								
EK057G: Nitrite as N (Sol.)	----	0.1	mg/kg	<0.100	2.5 mg/kg	104	89.2	104
EK059G: NOX as N by Discrete Analyser (QCLot: 1054384)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.100	2.5 mg/kg	104	75.4	119
EP068A: Organochlorine Pesticides (OC) (QCLot: 1054357)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	91.6	47.3	130
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	92.2	45.6	128
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	74.0	55.9	130
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	99.8	51.1	129
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	98.7	56.1	127
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	94.8	51.6	125
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	101	54.9	121
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	98.0	56.9	122
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	98.5	57.9	122
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	101	56.6	128
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	99.2	57.1	123
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	86.8	56	123
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	98.4	58.4	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1054357) - continued								
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	104	57.9	128
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	110	60.6	128
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	100	55.7	126
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	# 128	47.1	123
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	102	57.2	128
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	90.4	52.5	134
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	105	57.7	126
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	107	53.4	139
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1055693)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	10 mg/kg	95.4	77	117
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	10 mg/kg	101	75	121
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	10 mg/kg	99.7	79	117
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	10 mg/kg	91.6	73	125
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	10 mg/kg	92.1	77	115
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	10 mg/kg	98.0	79	117
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	10 mg/kg	94.1	79	115
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	10 mg/kg	95.5	79	115
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	10 mg/kg	93.5	76	116
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	10 mg/kg	92.7	78	116
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	10 mg/kg	88.2	70	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	10 mg/kg	75.5	69	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	10 mg/kg	88.8	72	118
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	10 mg/kg	85.8	71	119
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	10 mg/kg	85.1	71	119
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	10 mg/kg	82.2	69	119
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1053444)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	32 mg/kg	113	81	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055692)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	606 mg/kg	73.5	69	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	1460 mg/kg	97.3	69	127
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	342 mg/kg	92.1	70	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1055036)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.5	85	111
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	95.3	74	122
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	98.6	82	122

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 1055036) - continued								
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.4	90	114
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.2	86	114
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	102	83	117
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.1	88	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	92	114
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	88	112
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	86	116
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	99.8	85	117
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.2	81	119
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1054593)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	79.1	76	126

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1054377)							
EM0906990-002	4A/T5/VS-2	EG005T: Arsenic	7440-38-2	50 mg/kg	87.5	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	113	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	98.0	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.3	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	93.5	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	99.0	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	96.6	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.8	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	92.7	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	91.1	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1054378)							
EM0906990-002	4A/T5/VS-2	EG035T: Mercury	7439-97-6	5.0 mg/kg	76.9	70	130
EK055: Ammonia as N (QCLot: 1057130)							
EM0906990-005	4A/T5/VS-5	EK055: Ammonia as N	7664-41-7	100 mg/kg	93.2	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1054383)							
EM0906990-005	4A/T5/VS-5	EK057G: Nitrite as N (Sol.)	----	2.5 mg/kg	126	70	130
EK059G: NOX as N by Discrete Analyser (QCLot: 1054384)							
EM0906990-005	4A/T5/VS-5	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.5 mg/kg	114	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1054357)							
EM0906990-005	4A/T5/VS-5	EP068: gamma-BHC	58-89-9	0.25 mg/kg	65.8	45	133
		EP068: Heptachlor	76-44-8	0.25 mg/kg	65.2	40	128
		EP068: Aldrin	309-00-2	0.25 mg/kg	64.9	45	126
		EP068: Dieldrin	60-57-1	0.25 mg/kg	67.7	50	126
		EP068: Endrin	72-20-8	0.25 mg/kg	76.7	46	134
		EP068: 4.4`-DDT	50-29-3	0.25 mg/kg	58.0	35	135
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1055693)							
EM0906994-038	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	105	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	111	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1053444)							
EM0906999-001	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	94.1	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055692)							
EM0906990-005	4A/T5/VS-5	EP071: C10 - C14 Fraction	----	606 mg/kg	70.8	60	130

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055692) - continued							
EM0906990-005	4A/T5/VS-5	EP071: C15 - C28 Fraction	----	1460 mg/kg	94.4	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	89.3	60	130

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1055036)							
EM0906668-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	102	70	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	98.1	70	130
		EG020A-T: Barium	7440-39-3	1 mg/L	101	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	100	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.4	70	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	101	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	99.6	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	97.0	70	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.4	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	70	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	102	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.6	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1054593)							
EM0906992-004	Anonymous	EG035T: Mercury	7439-97-6	0.0100 mg/L	77.8	70	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **EM0906990**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	Page	: 1 of 4
Order number	: 40063		
C-O-C number	: 0042	Quote number	: EM2009OTEK0282 (ME/281/09)
Site	: ----		
Sampler	: CB	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 27-JUL-2009	Issue Date	: 04-AUG-2009 15:24
Client Requested Due Date	: 04-AUG-2009	Scheduled Reporting Date	: **04-AUG-2009**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 6.4 - Ice bricks present
No. of coolers/boxes	: 1	No. of samples received	: 7
Sercurity Seal	: Intact.	No. of samples analysed	: 7

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- **Asbestos analysis will be subcontracted to ASET.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - ASB-SOL (Subcontracted) Asbestos - Count (Solid)	SOIL - EA002 pH (1:5)	SOIL - EK055 (solids) Ammonia as N	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - MW008S Thermotolerant Coliforms & E.coli by MPN in solids	SOIL - NT-4S NO2 and NO3	SOIL - S-03 13 Metals (NEPM Suite - incl. Digestion)
EM0906990-001	27-JUL-2009 15:00	4A/T5/VS-1				✓				✓
EM0906990-002	27-JUL-2009 15:00	4A/T5/VS-2						✓	✓	✓
EM0906990-003	27-JUL-2009 15:00	4A/T5/VS-3	✓	✓	✓					✓
EM0906990-004	27-JUL-2009 15:00	4A/T5/VS-4					✓			✓
EM0906990-005	27-JUL-2009 15:00	4A/T5/VS-5	✓	✓	✓	✓	✓	✓	✓	✓
EM0906990-006	27-JUL-2009 15:00	4A/VS/QS-1			✓	✓				✓

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - TPH only TPH (C6 - C36)
EM0906990-001	27-JUL-2009 15:00	4A/T5/VS-1	✓
EM0906990-005	27-JUL-2009 15:00	4A/T5/VS-5	✓
EM0906990-006	27-JUL-2009 15:00	4A/VS/QS-1	✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - W-03T 13 Metals (Total) (NEPM)
EM0906990-007	27-JUL-2009 15:00	4A/TB-13	✓

Requested Deliverables

MR CHRISTIAN BEASLEY

- *AU Certificate of Analysis - NATA (COA)	Email	cbeasley@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	cbeasley@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	cbeasley@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	cbeasley@otek.com.au
- Default - Chain of Custody (COC)	Email	cbeasley@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	cbeasley@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	cbeasley@otek.com.au
- Trigger - Subcontract Report (SUBCO)	Email	cbeasley@otek.com.au

MR GURDEEP KHOSA

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- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gkhosa@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gkhosa@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	gkhosa@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	gkhosa@otek.com.au
- Default - Chain of Custody (COC)	Email	gkhosa@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	gkhosa@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	gkhosa@otek.com.au
- Trigger - Subcontract Report (SUBCO)	Email	gkhosa@otek.com.au

MR LUKE DAL LAGO

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- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ldallago@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	ldallago@otek.com.au
- Default - Chain of Custody (COC)	Email	ldallago@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	ldallago@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	ldallago@otek.com.au
- Trigger - Subcontract Report (SUBCO)	Email	ldallago@otek.com.au

MR TOM SANTWYK-ANDERSON

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- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	tsantwyk-anderson@otek.com.au
- Default - Chain of Custody (COC)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	tsantwyk-anderson@otek.com.au
- Trigger - Subcontract Report (SUBCO)	Email	tsantwyk-anderson@otek.com.au

MS EMILY BURKE

- *AU Certificate of Analysis - NATA (COA)	Email	eburke@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	eburke@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	eburke@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	eburke@otek.com.au
- Default - Chain of Custody (COC)	Email	eburke@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	eburke@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	eburke@otek.com.au
- Trigger - Subcontract Report (SUBCO)	Email	eburke@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA (COA)	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	vicreception@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	vicreception@otek.com.au
- Default - Chain of Custody (COC)	Email	vicreception@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	vicreception@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	vicreception@otek.com.au
- Trigger - Subcontract Report (SUBCO)	Email	vicreception@otek.com.au

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD

ABN 36 088 095 112

Our ref : ASET18870/ 22050 / 1 - 2
Your ref: EM0906990
NATA Accreditation No: 14484

29 July 2009

Australian Laboratory Services Pty Ltd
2-4 Westall Road
Springvale VIC 3171

Attn: Mr Paul Loewy
Fax No: 03-95499601

Dear Paul,

Asbestos Identification
This report presents the results of two samples, forwarded by Australian Laboratory Services Pty Ltd on 29 July 2009, for analysis for asbestos.

1.Introduction: Two samples forwarded were examined and analysed for the presence of asbestos.

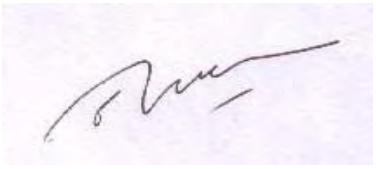
2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining Method **(Safer Environment Method 1.)**

3. Results :

Sample No. 1. ASET18870 / 22050 / 1. EM0906990 - 3.
Approx dimensions 10.0 cm x 8.0 cm x 2.0 cm
The sample consisted of a mixture of clayish soil, stones and plant matter.
No asbestos detected.

Sample No. 2. ASET18870 / 22050 / 2. EM0906990 - 5.
Approx dimensions 10.0 cm x 8.0 cm x 2.0 cm
The sample consisted of a mixture of clayish soil and stones.
No asbestos detected.

Analysed and reported by,



Imam Malik. BSc.
Mineralogist / Approved Signatory
Approved Identifier.

NATA
WORLD RECOGNISED ACCREDITATION

This document is issued in accordance with NATA's Accreditation requirements. Accredited for compliance with ISO/IEC 17025.

COC NUMBER: 0042

LAB ALS
ADDRESS 4 Westall Rd, Clayton
LAB CONTACT Steve Mc Grath
PHONE 85499600

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
tsantuyk-anderson@otek.com.au
gkhosa@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT # 3106004/1000
PROJECT NAME Infrastructure Removal
COLLECTORS NAME Christian Beasley
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL
FINAL REPORT BY: one week turn around
LAB QUOTE REF: ME/289/09
OTEK PO No.: 40063

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	Metals (13)	E. coli	nitrite	nitrate	faecal coliforms	ammonia	solvents	NH	OCPs	TPH	PAH	REMARKS
DISCRETE SAMPLE REQUEST:																					
4A/TS/VS-1		1	Soil	X				27/07/09		X								X	X		Send Asbestos to ASET Please
4A/TS/VS-2		2		X						X	X	X	X	X							
4A/TS/VS-3		3		X						X					X	X	X				
4A/TS/VS-4		4		X						X										X	
4A/TS/VS-5		5		X						X	X	X	X	X	X	X	X	X	X	X	
4A/VS/QS-1		6		X						X					X			X	X		
4A/TB-13		7	Water	X				27/07/09		X											

Environmental Division
Melbourne
Work Order
EM0906990

Telephone : +61 3-8549 9600

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Christian Beasley (Signature) CBeasley Date 27/07/09

Relinquished by:	Date	Time	Received by:	Date	Time
CBeasley	27/07/09			27/07/09	
	Date	Time	Received by:	Date	Time
			PARCEL	27/7	
	Date	Time	Received by:	Date	Time

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

Additional Comments:

Please provide electronic results in ESDAT format

DATA VALIDATION REPORT

Project Name:	Werribee Infrastructure Removal Works	**Validation Conducted by:**	CEC
Project Number:	3106004	**Signed & Dated:**	12/11/2010
Address:	New Farm Road Werribee		

Primary Laboratory:	ALS	**Secondary Laboratory:**	N/A	**Sample Matrix:** (Shade)
Batch Number:	EM0907069	**Batch Number:**	N/A	**Soil**
				Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
4	1	0	2

Have the Following Criteria Been Met? (Shade)

Explain any Discrepancies:

Blind Replicate	**OK if >5%**	25	**NOT OK if <5%**	
Split Sample	**OK if >5%**	0	**NOT OK if <5%**	QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.
Blank Samples	**OK**	2	**NOT OK**	

1	Rinsate
0	Field
1	Trip

Refer to OTEK QA/QC results table

	Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	1	Number obtained		
	4A/VS/QS-2	Sample Identification		
A	14	Total Number of Analytes		B
	0	No. of analytes with RPD >50% (Fail)		
	14	Number of analytes <50% (Pass)		
	100.0	% Pass		

Explain any Discrepancies:

QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	1		1
Sample Identifictaion	4A/TB-14		4A/RB-14
Number of Analytes	13		13
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	10	
	No. Fails	0	
Analysis	**No. Passes**	13	
	No. Fails	0	

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

DATA VALIDATION REPORT

Project Name: Werribee Infrastructure Removal Works

Validation Conducted by: CEC

Section 3: **Laboratory Data Quality - Refer to Certificate of Analysis**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	75	
# samples RPD >50% **(FAIL)**	0	
% Pass	100	

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	54	
# Analytes with RPD >PQL **(FAIL)**	0	
% Pass	100	

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	50	
# analytes outside range i.e <70% or >130% **(FAIL)**	0	
% Pass	100	

Surrogates

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	37	
# analytes outside range i.e <70% or >130% **(FAIL)**	6	
% Pass	84	

Internal Spikes

OK (>95%)	84
NOT OK (<95%)	

Explanation for Failures:

6 spike recovery percentages were less than 70%, all of these were still within acceptable laboratory limits for the particular analytes: Organochlorine pesticides

FINAL DATA

	Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
A	Primary Duplicates	0	14	100.0
B	Secondary Duplicates	0	0	-
C	Trip Blanks	0	13	100.0
D	Field Blanks	0	0	-
E	Rinsate Blanks	0	13	100.0
F & G	Lab Internal Duplicates	0	75	100.0
H & I	Lab Method Blanks	0	54	100.0
J & K	Lab Internal Spike Recoveries	0	50	100.0
L & M	Laboratory Spike Recoveries	6	37	83.8
	Total	**6**	**256**	**97.7**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

OTEK Australia
INSPECTION VERIFICATION RECORD
PASS ✓ FAIL
NAME (Print) CATHERINE O'REILLY
SIGNATURE
DATE 8 MARCH 2010

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0907069**	Page	: 1 of 7
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 40065		
C-O-C number	: 0044	Date Samples Received	: 29-JUL-2009
Sampler	: CB	Issue Date	: 05-AUG-2009
Site	: ---		
		No. of samples received	: 7
Quote number	: ME/281/09	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Herman Lin	Senior Inorganic Chemist	Inorganics
Kelly Ding	Senior Microbiologist	Microbiology
Nancy Wang	Instrument Chemist	Organics
Terrance Hettipathirana	Team Leader - Metals	Inorganics
Xingbin Lin	Instrument Chemist	Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **ALS is not NATA accredited for the analysis of Faecal Coliforms and E.coli in soil matrix. All controls passed their respective tests.**
- **Where MPN/g = Most Probable Number per gram**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/VS-1	4A/VS-2	4A/VS-3	4A/VS-4	4A/VS/QS-2
Client sampling date / time				29-JUL-2009 15:00	29-JUL-2009 15:00	29-JUL-2009 15:00	29-JUL-2009 15:00	29-JUL-2009 15:00
				EM0907069-001	EM0907069-002	EM0907069-003	EM0907069-004	EM0907069-007
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	6.8	7.6	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	12.3	13.0	5.0	4.8	4.5
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM)								
Sulfate as SO4 2-	14808-79-8	50	mg/kg	----	----	50	100	50
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	6	<5	<5	<5
Barium	7440-39-3	10	mg/kg	70	1530	50	50	50
Beryllium	7440-41-7	1	mg/kg	1	1	<1	<1	<1
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	34	32	26	26	27
Cobalt	7440-48-4	2	mg/kg	19	13	11	10	11
Copper	7440-50-8	5	mg/kg	17	17	8	8	8
Lead	7439-92-1	5	mg/kg	15	12	11	11	12
Manganese	7439-96-5	5	mg/kg	280	212	387	373	439
Nickel	7440-02-0	2	mg/kg	45	43	17	16	17
Vanadium	7440-62-2	5	mg/kg	45	42	32	31	32
Zinc	7440-66-6	5	mg/kg	24	23	29	29	29
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N (Sol.)	----	0.100	mg/kg	----	----	0.338	0.660	----
EK058G: Nitrate as N by Discrete Analyser								
^ Nitrate as N (Sol.)	----	0.100	mg/kg	----	----	0.736	0.465	----
EK059G: NOX as N by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.100	mg/kg	----	----	1.07	1.12	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/VS-1	4A/VS-2	4A/VS-3	4A/VS-4	4A/VS/QS-2
				Client sampling date / time: 29-JUL-2009 15:00	29-JUL-2009 15:00	29-JUL-2009 15:00	29-JUL-2009 15:00	29-JUL-2009 15:00
				EM0907069-001	EM0907069-002	EM0907069-003	EM0907069-004	EM0907069-007
EP068A: Organochlorine Pesticides (OC) - Continued								
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
MW008: Faecal Coliforms & E.coli by MPN								
Faecal Coliforms	----	-	MPN/g	----	----	<3	<3	----
Escherichia coli	----	-	MPN/g	<3	<3	<3	<3	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	**79.6**	**93.9**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**80.4**	**93.4**	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**84.5**	**82.9**	----	----	----
Toluene-D8	2037-26-5	0.1	%	**81.7**	**79.8**	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	**84.7**	**84.7**	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID	4A/TB-14	4A/RB-14	----	----	----
				Client sampling date / time	29-JUL-2009 15:00	29-JUL-2009 15:00	----	----	----
					EM0907069-005	**EM0907069-006**	**----**	**----**	**----**
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	----	----	----
Beryllium	7440-41-7	0.001	mg/L		<0.001	<0.001	----	----	----
Barium	7440-39-3	0.001	mg/L		<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L		<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	130
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	53	140
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	70	130
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	130

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0907069**	Page	: 1 of 8
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0044	Date Samples Received	: 29-JUL-2009
Sampler	: CB	Issue Date	: 05-AUG-2009
Order number	: 40065		
		No. of samples received	: 7
Quote number	: ME/281/09	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non -volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils)							
Soil Glass Jar - Unpreserved							
4A/VS-3, 4A/VS-4	**29-JUL-2009**	**03-AUG-2009**	05-AUG-2009	✓	**03-AUG-2009**	03-AUG-2009	✓
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
4A/VS-1, 4A/VS-2, 4A/VS-3, 4A/VS-4, 4A/VS/QS-2	**29-JUL-2009**	**----**	----	----	**03-AUG-2009**	05-AUG-2009	✓
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM)							
Soil Glass Jar - Unpreserved							
4A/VS-3, 4A/VS-4, 4A/VS/QS-2	**29-JUL-2009**	**04-AUG-2009**	25-JAN-2010	✓	**04-AUG-2009**	25-JAN-2010	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved							
4A/VS-1, 4A/VS-2, 4A/VS-3, 4A/VS-4, 4A/VS/QS-2	**29-JUL-2009**	**03-AUG-2009**	26-AUG-2009	✓	**03-AUG-2009**	25-JAN-2010	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved							
4A/VS-1, 4A/VS-2, 4A/VS-3, 4A/VS-4, 4A/VS/QS-2	**29-JUL-2009**	**03-AUG-2009**	26-AUG-2009	✓	**04-AUG-2009**	26-AUG-2009	✓
EK057G: Nitrite as N by Discrete Analyser							
Soil Glass Jar - Unpreserved							
4A/VS-3, 4A/VS-4	**29-JUL-2009**	**03-AUG-2009**	05-AUG-2009	✓	**04-AUG-2009**	25-JAN-2010	✓
EK059G: NOX as N by Discrete Analyser							
Soil Glass Jar - Unpreserved							
4A/VS-3, 4A/VS-4	**29-JUL-2009**	**03-AUG-2009**	05-AUG-2009	✓	**04-AUG-2009**	25-JAN-2010	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved								
4A/VS-1,	4A/VS-2	**29-JUL-2009**	**31-JUL-2009**	12-AUG-2009	✓	**03-AUG-2009**	09-SEP-2009	✓
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved								
4A/VS-1,	4A/VS-2	**29-JUL-2009**	**31-JUL-2009**	12-AUG-2009	✓	**03-AUG-2009**	09-SEP-2009	✓
Soil Glass Jar - Unpreserved								
4A/VS-1,	4A/VS-2	**29-JUL-2009**	**31-JUL-2009**	12-AUG-2009	✓	**31-JUL-2009**	12-AUG-2009	✓
MW008: Faecal Coliforms & E.coli by MPN								
Sterile Plastic Jar								
4A/VS-1,	4A/VS-2,	**29-JUL-2009**	**----**	----	----	**29-JUL-2009**	30-JUL-2009	✓
4A/VS-3,	4A/VS-4							

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered								
4A/TB-14,	4A/RB-14	**29-JUL-2009**	**31-JUL-2009**	25-JAN-2010	✓	**31-JUL-2009**	25-JAN-2010	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered								
4A/TB-14,	4A/RB-14	**29-JUL-2009**	**----**	----	----	**31-JUL-2009**	26-AUG-2009	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	2	2	**100.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N - Soluble by Discrete Analyser	EK057G	2	2	**100.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	5	**20.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	15	**13.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Sulfate - Calcium Phosphate Soluble	ED040N	1	3	**33.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	5	**20.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	6	**16.7**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	19	**10.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	8	**25.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	2	**50.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	2	**50.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	5	**20.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Sulfate - Calcium Phosphate Soluble	ED040N	1	3	**33.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	5	**20.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	6	**16.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	**5.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	8	**12.5**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	2	**50.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	2	**50.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	5	**20.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Sulfate - Calcium Phosphate Soluble	ED040N	1	3	**33.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	5	**20.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	6	**16.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	**5.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	8	**12.5**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	2	**50.0**	**5.0**	✓	ALS QCS3 requirement
Nitrite as N - Soluble by Discrete Analyser	EK057G	1	2	**50.0**	**5.0**	✓	ALS QCS3 requirement

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Pesticides by GCMS	EP068	1	5	**20.0**	**5.0**	✓	ALS QCS3 requirement
Sulfate - Calcium Phosphate Soluble	ED040N	1	3	**33.3**	**5.0**	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	5	**20.0**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	6	**16.7**	**5.0**	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	19	**5.3**	**5.0**	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	8	**12.5**	**5.0**	✓	ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	2	10	**20.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	2	14	**14.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	10	**10.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	**7.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	10	**10.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	**7.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	10	**10.0**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	14	**7.1**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (1999) Schedule B(3) (Method 103)
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Sulfate - Calcium Phosphate Soluble	ED040N	SOIL	The sample is extracted with a calcium phosphate solution. The phosphate ion displaces the adsorbed sulfate while calcium ions depress the extraction of interfering S from soil organic matter. SO4 in the extract is determined by ICPAES and reported as dry weight in the original soil. This method is compliant with NEPM (1999) Schedule B(3) (Method 406)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Nitrite as N - Soluble by Discrete Analyser	EK057G	SOIL	APHA 21st ed., 4500 NO3- B. Nitrite in a water extract is determined by direct colourimetry by Discrete Analyser.
Nitrate as N - Soluble by Discrete Analyser	EK058G	SOIL	APHA 21st ed., 4500 NO3--F. Nitrate in the 1:5 soil:water extract is reduced to nitrite by way of a cadmium reduction column followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results.
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	SOIL	APHA 21st ed., 4500 NO3- F. Combined oxidised Nitrogen (NO2+NO3) in a water extract is determined by Cadmium Reduction, and direct colourimetry by Discrete Analyser.
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Coliforms & E.coli (MPN by DST - Colilert/Quanti-tray)	MW004S	SOIL	Report 71 2002
Thermotolerant Coliforms & E.coli by MPN	* MW008S	SOIL	AS 4276.6 - 1995

Analytical Methods	Method	Matrix	Method Descriptions
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Calcium Phosphate Extraction for Sulphate as SO4 2-	ED040NPR	SOIL	The sample is extracted with a calcium phosphate solution. The phosphate ion displaces the adsorbed sulphate while calcium ions depress the extraction of interfering S from soil organic matter. SO4 in the extract is determined by ICPAES and reported as dry weight in the original soil. This method is compliant with NEPM (1999) Schedule B(3) (Method 406)
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EM0907069-002	4A/VS-2	**Barium**	7440-39-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- **No Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

QUALITY CONTROL REPORT

Work Order	: **EM0907069**	Page	: 1 of 9
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
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Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0044	Date Samples Received	: 29-JUL-2009
Sampler	: CB	Issue Date	: 05-AUG-2009
Order number	: 40065		
		No. of samples received	: 7
Quote number	: ME/281/09	No. of samples analysed	: 7

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Herman Lin	Senior Inorganic Chemist	Inorganics
Kelly Ding	Senior Microbiologist	Microbiology
Nancy Wang	Instrument Chemist	Organics
Terrance Hettipathirana	Team Leader - Metals	Inorganics
Xingbin Lin	Instrument Chemist	Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 1057149)									
EM0907069-003	4A/VS-3	EA002: pH Value	----	0.1	pH Unit	6.8	6.9	0.0	0% - 20%
EM0907111-009	Anonymous	EA002: pH Value	----	0.1	pH Unit	6.9	6.9	0.0	0% - 20%
EA055: Moisture Content (QC Lot: 1057141)									
EM0907016-054	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.5	13.2	2.3	0% - 50%
EM0907069-004	4A/VS-4	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	4.8	4.7	0.0	No Limit
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM) (QC Lot: 1057097)									
EM0907069-003	4A/VS-3	ED040N: Sulfate as SO4 2-	14808-79-8	50	mg/kg	50	<50	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1055899)									
EM0907069-001	4A/VS-1	EG005T: Beryllium	7440-41-7	1	mg/kg	1	1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	70	90	25.8	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	34	31	7.7	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	19	16	16.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	45	43	3.4	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	17	17	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	15	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	280	274	2.3	0% - 20%
		EG005T: Vanadium	7440-62-2	5	mg/kg	45	44	3.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	24	26	7.8	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1055900)									
EM0907069-001	4A/VS-1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1057150)									
EM0907069-003	4A/VS-3	EK057G: Nitrite as N (Sol.)	----	0.100	mg/kg	0.338	0.330	2.5	No Limit
EM0907111-008	Anonymous	EK057G: Nitrite as N (Sol.)	----	----	-	Not Authorised	# Not Authorised	# ----	0% - 20%
EK059G: NOX as N by Discrete Analyser (QC Lot: 1057151)									
EM0907069-003	4A/VS-3	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.100	mg/kg	1.07	1.02	5.2	0% - 50%
EM0907111-008	Anonymous	EK059G: Nitrite + Nitrate as N (Sol.)	----	----	-	Not Authorised	# Not Authorised	# ----	0% - 20%
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1056315)									
EM0907069-001	4A/VS-1	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 1056315) - continued									
EM0907069-001	4A/VS-1	EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1055858)									
EM0906999-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	230	180	25.6	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	170	160	6.8	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM0907049-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1055880)									
EM0907065-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	76	47	46.4	No Limit
EM0907069-002	4A/VS-2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 1055988)									
EM0906980-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.018	0.017	0.0	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.017	0.016	0.0	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.003	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 1055988) - continued									
EM0906980-001	Anonymous	EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.039	0.038	3.8	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EM0907012-004	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0078	0.0076	2.1	0% - 20%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.035	0.034	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.009	0.009	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.307	0.300	2.2	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.081	0.081	0.0	0% - 50%
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1055810)									
EM0907069-005	4A/TB-14	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM0907110-007	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM) (QCLot: 1057097)								
ED040N: Sulfate as SO4 2-	14808-79-8	50	mg/kg	<50	3000 mg/kg	103	85	119
EG005T: Total Metals by ICP-AES (QCLot: 1055899)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	93.2	82.8	119
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	97.0	89	119
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	93.2	85.4	117
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	94.7	87.6	116
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	94.6	85.5	116
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	94.6	85.4	115
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	97.2	86.6	113
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	93.1	81.3	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1055900)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	81.5	71.9	119
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1057150)								
EK057G: Nitrite as N (Sol.)	----	0.1	mg/kg	<0.100	2.5 mg/kg	101	89.2	104
EK059G: NOX as N by Discrete Analyser (QCLot: 1057151)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.100	2.5 mg/kg	110	75.4	119
EP068A: Organochlorine Pesticides (OC) (QCLot: 1056315)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	109	47.3	130
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	116	45.6	128
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	117	55.9	130
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	92.1	51.1	129
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	97.5	56.1	127
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	104	51.6	125
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	108	54.9	121
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	109	56.9	122
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	107	57.9	122
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	102	56.6	128
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	110	57.1	123
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	86.0	56	123
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	103	58.4	125

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1056315) - continued								
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	89.4	57.9	128
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	107	60.6	128
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	118	55.7	126
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	83.8	47.1	123
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	96.3	57.2	128
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	78.6	52.5	134
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	109	57.7	126
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	75.5	53.4	139
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055858)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	606 mg/kg	74.2	69	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	1460 mg/kg	98.2	69	127
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	342 mg/kg	102	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055880)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	32 mg/kg	87.6	81	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1055988)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	85	111
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	110	74	122
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	105	82	122
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	90	114
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.2	86	114
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	106	83	117
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	104	88	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	104	92	114
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.8	88	112
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	106	86	116
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	95.3	85	117
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	104	81	119
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1055810)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	102	76	126

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED040N: Sulfate - Calcium Phosphate Soluble (NEPM) (QCLot: 1057097)							
EM0907069-004	4A/VS-4	ED040N: Sulfate as SO4 2-	14808-79-8	3000 mg/kg	117	70	130
EG005T: Total Metals by ICP-AES (QCLot: 1055899)							
EM0907069-002	4A/VS-2	EG005T: Arsenic	7440-38-2	50 mg/kg	91.1	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	# Not Determined	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	98.1	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	88.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	92.7	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	95.5	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	93.2	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	97.4	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	102	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	96.0	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	90.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1055900)							
EM0907069-002	4A/VS-2	EG035T: Mercury	7439-97-6	5.0 mg/kg	89.9	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1057150)							
EM0907069-003	4A/VS-3	EK057G: Nitrite as N (Sol.)	----	2.5 mg/kg	113	70	130
EK059G: NOX as N by Discrete Analyser (QCLot: 1057151)							
EM0907069-003	4A/VS-3	EK059G: Nitrite + Nitrate as N (Sol.)	----	2.5 mg/kg	114	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 1056315)							
EM0907069-002	4A/VS-2	EP068: gamma-BHC	58-89-9	0.25 mg/kg	66.1	45	133
		EP068: Heptachlor	76-44-8	0.25 mg/kg	67.0	40	128
		EP068: Aldrin	309-00-2	0.25 mg/kg	65.1	45	126
		EP068: Dieldrin	60-57-1	0.25 mg/kg	63.6	50	126
		EP068: Endrin	72-20-8	0.25 mg/kg	66.3	46	134
		EP068: 4.4`-DDT	50-29-3	0.25 mg/kg	55.3	35	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055858)							
EM0906999-002	Anonymous	EP071: C10 - C14 Fraction	----	606 mg/kg	74.7	60	130
		EP071: C15 - C28 Fraction	----	1460 mg/kg	106	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	111	60	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1055880)							
EM0907065-011	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	89.8	----	----

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG020T: Total Metals by ICP-MS (QCLot: 1055988)							
EM0906980-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	102	70	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	111	70	130
		EG020A-T: Barium	7440-39-3	1 mg/L	106	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	107	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	92.1	70	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	104	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	100	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	98.9	70	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	90.9	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	103	70	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	97.7	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	104	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1055810)							
EM0907069-006	4A/RB-14	EG035T: Mercury	7439-97-6	0.0100 mg/L	91.6	70	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **EM0907069**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR GURDEEP KHOSA	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: gkhosa@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	Page	: 1 of 3
Order number	: 40065		
C-O-C number	: 0044	Quote number	: EM2009OTEK0282 (ME/281/09)
Site	: ----		
Sampler	: CB	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 29-JUL-2009	Issue Date	: 30-JUL-2009 15:59
Client Requested Due Date	: 05-AUG-2009	Scheduled Reporting Date	: **05-AUG-2009**

Delivery Details

Mode of Delivery	: Client Drop off	Temperature	: 7.2 - Ice present
No. of coolers/boxes	: ----	No. of samples received	: 7
Sercurity Seal	: Intact.	No. of samples analysed	: 7

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA002 pH (1:5)	SOIL - ED040N Calcium Phosphate Extractable Sulfate	SOIL - EK057G (solids) Nitrite as N - soluble by Discrete Analyser	SOIL - EK058G (solids) Nitrate as N - soluble by Discrete Analyser	SOIL - EP068A (solids) Organochlorine Pesticides by GCMS	SOIL - MW004S Coliforms & E.coli (MPN by DST) in solids	SOIL - MW008S Thermotolerant Coliforms & E.coli by MPN in solids	SOIL - S-03 13 Metals (NEPM Suite - incl. Digestion)
EM0907069-001	29-JUL-2009 15:00	4A/VS-1					✓	✓		✓
EM0907069-002	29-JUL-2009 15:00	4A/VS-2					✓	✓		✓
EM0907069-003	29-JUL-2009 15:00	4A/VS-3	✓	✓	✓	✓		✓	✓	✓
EM0907069-004	29-JUL-2009 15:00	4A/VS-4	✓	✓	✓	✓		✓	✓	✓
EM0907069-007	29-JUL-2009 15:00	4A/VS/QS-2		✓						✓

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - TPH only TPH (C6 - C36)
EM0907069-001	29-JUL-2009 15:00	4A/VS-1	✓
EM0907069-002	29-JUL-2009 15:00	4A/VS-2	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-03T 13 Metals (Total) (NEPM)
EM0907069-005	29-JUL-2009 15:00	4A/TB-14	✓
EM0907069-006	29-JUL-2009 15:00	4A/RB-14	✓

Requested Deliverables

MR GURDEEP KHOSA

- *AU Certificate of Analysis - NATA (COA)	Email	gkhosa@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gkhosa@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gkhosa@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	gkhosa@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	gkhosa@otek.com.au
- Default - Chain of Custody (COC)	Email	gkhosa@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	gkhosa@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	gkhosa@otek.com.au

MR TOM SANTWYK-ANDERSON

- *AU Certificate of Analysis - NATA (COA)	Email	tsantwyk-anderson@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	tsantwyk-anderson@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	tsantwyk-anderson@otek.com.au
- Default - Chain of Custody (COC)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	tsantwyk-anderson@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA (COA)	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	vicreception@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	vicreception@otek.com.au
- Default - Chain of Custody (COC)	Email	vicreception@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	vicreception@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	vicreception@otek.com.au

COC NUMBER: 0044

LAB ALS
ADDRESS 4 Westall, Clayton
LAB CONTACT Steve McGrath
PHONE 85499600

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
tsantwyk-anderson@otek.com.au
gkhosa@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT # 3106004/1000
PROJECT NAME Infrastructure Removal
COLLECTORS NAME Christian Beasley
cbeasley@otek.com.au
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL
FINAL REPORT BY: 1 week turn around
LAB QUOTE REF: ME/281/09
OTEK PO No.: 40065

	SAMPLE ID	DEPTH (metres)	LAB #	MATRIX	PRESERVATION METHOD				SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE									REMARKS
	DISCRETE SAMPLE REQUEST:			Soil Water Sludge Air	ICE	ACIDIFIED	OTHER	NONE			Metals 13	E.coli	nitrite	nitrate	faecal coliforms	pH	sulphate	TPH	OCP	
1	4A/VS-1			Soil	X				29/07/09	2	X	X						X	X	
2	4A/VS-2			↓	X				↓	2	X	X						X	X	
3	4A/VS-3				X					2	X	X	X	X	X	X	X			
4	4A/VS-4				X					2	X	X	X	X	X	X	X			
5	4A/RB-14 Southgate Lane			Water	X				27/07/09	1										
6	4A/RB-14 labelled as 4A/RB-14 Rep.			Water	X				29/07/09	1										
7	Extra sample 4A/VS/BS-2																			

SAMPLES SENT TO LAB
MICRO NITRATE FERROUS
OTHER
Rec 29/07/09

Environmental Division
Melbourne
Work Order
EM0907069

Telephone : +61-3-8549 9600

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Christian Beasley (Signature) CBeasley Date 29/07/09

Relinquished by:	Date	Time	Received by:	Date	Time
CBeasley	29/07/09	2:00	Nathan S44	29/7	
Nathan S44			Sandy 29/7 3:30PM		

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

Additional Comments:

Please provide electronic results in ESDAT format

DATA VALIDATION REPORT

Project Name:	Werribee Hydrogeological Assessment	**Validation Conducted by:**	RMF
Project Number:	3106004	**Signed & Dated:**	17/02/2010
Address:	New Farm Road Werribee		

Primary Laboratory:	ALS	**Secondary Laboratory:**	Labmark	**Sample Matrix:** (Shade)
Batch Number:	EM0912070	**Batch Number:**	09ENME0044068	**Soil**
				Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
8	1	1	3

Have the Following Criteria Been Met? (Shade)

Explain any Discrepancies:

Blind Replicate	**OK if >5%** 12.5	**NOT OK if <5%**	
Split Sample	**OK if >5%** 12.5	**NOT OK if <5%**	
Blank Samples	**OK** 3	**NOT OK**	

2	Rinsate
0	Field
1	Trip

Refer to OTEK QA/QC results table

	Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	1	**Number obtained**	**1**	
	A4/QS-1	**Sample Identification**	A4/QS-1A	
A	133	**Total Number of Analytes**	119	**B**
	0	**No. of analytes with RPD >50% (Fail)**	4	
	133	**Number of analytes <50% (Pass)**	115	
	100.0	**% Pass**	96.6	

Explain any Discrepancies:

A4/QS-1A - 4 exceedences for Arsenic, Total Chromium, Selenium and Nitrate as N, with RPD's of >100%, >186%, >123% and 101% respectively.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	1		2
Sample Identifictaion	A4/TB-2		A4/RB-2, A4/RB-3
Number of Analytes	18		36
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	12	13
	No. Fails	0	0
Analysis	**No. Passes**	55	13
	No. Fails	3	0

Explain any Discrepancies:

A4/MW-1 - 8 breached ALS holding times by 4-6 days for pH analysis.

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

DATA VALIDATION REPORT

Project Name: Werribee Hydrogeological Assessment

Validation Conducted by: RMF

Section 3: **Laboratory Data Quality - Refer to Quality Control Report**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	193	0
# samples RPD >50% **(FAIL)**	2	0
% Pass	99	-

Laboratory Duplicate RPDs

OK (>95%)	99
NOT OK (<95%)	

Explanation for Failures:

No data provided from Labmark.

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	188	138
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	190	86
# analytes outside range i.e <70% or >130% **(FAIL)**	9	5
% Pass	95	94

Surrogates

OK (>95%)	95
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	37	0
# Analytes outside range i.e <70% or >130%	1	0
% Pass	97	-

Internal Spikes

OK (>95%)	97
NOT OK (<95%)	

Explanation for Failures:

No data provided from Labmark.

FINAL DATA

	Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
A	Primary Duplicates	0	133	100.0
B	Secondary Duplicates	4	119	96.6
C	Trip Blanks	0	18	100.0
D	Field Blanks	0	0	-
E	Rinsate Blanks	0	36	100.0
F & G	Lab Internal Duplicates	2	193	99.0
H & I	Lab Method Blanks	0	326	100.0
J & K	Lab Internal Spike Recoveries	14	276	95.0
L & M	Laboratory Spike Recoveries	1	37	97.3
	Total	**21**	**1138**	**98.2**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) ROD FOUNTAIN
SIGNATURE
DATE 12/2/10

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0912070**	Page	: 1 of 14
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 AREA 4 GME	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 0779		
C-O-C number	: 0104	Date Samples Received	: 27-NOV-2009
Sampler	: KB	Issue Date	: 08-DEC-2009
Site	: ----		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 12

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Nancy Wang	Instrument Chemist	Organics
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **Ionic Balance out of acceptable limits for EM012070 #6 due to analytes not quantified in this report.**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
				Client sampling date / time: 25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EA005: pH								
pH Value	----	0.01	pH Unit	**7.40**	**7.50**	**7.40**	**7.20**	**7.45**
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	**7750**	**7820**	**7980**	**6450**	**8020**
EA015: Total Dissolved Solids								
^ Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	**4660**	**4900**	**4980**	**3920**	**5000**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**360**	**356**	**337**	**352**	**420**
Total Alkalinity as CaCO3	----	1	mg/L	**360**	**356**	**337**	**352**	**420**
ED040F: Dissolved Major Anions								
Sulfate as SO4 2-	14808-79-8	1	mg/L	**354**	**363**	**323**	**288**	**358**
ED045P: Chloride by PC Titrator								
Chloride	16887-00-6	1	mg/L	**2100**	**2100**	**2410**	**1700**	**2370**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**180**	**181**	**262**	**174**	**180**
Magnesium	7439-95-4	1	mg/L	**177**	**181**	**328**	**166**	**336**
Sodium	7440-23-5	1	mg/L	**1010**	**1030**	**841**	**776**	**888**
Potassium	7440-09-7	1	mg/L	**24**	**25**	**14**	**8**	**16**
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	**0.001**	**0.001**	**0.001**	<0.001	**0.001**
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	**0.339**	**0.371**	**0.098**	**0.074**	**0.160**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	**0.003**	<0.001	**0.001**
Cobalt	7440-48-4	0.001	mg/L	**0.006**	**0.005**	<0.001	**0.005**	<0.001
Copper	7440-50-8	0.001	mg/L	**0.004**	**0.004**	**0.005**	**0.001**	**0.004**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	**0.743**	**0.742**	**0.001**	**0.861**	**0.002**
Molybdenum	7439-98-7	0.001	mg/L	**0.006**	**0.006**	<0.001	**0.001**	<0.001
Nickel	7440-02-0	0.001	mg/L	**0.027**	**0.028**	**0.011**	**0.013**	**0.007**
Selenium	7782-49-2	0.01	mg/L	<0.01	**0.01**	**0.01**	<0.01	<0.01
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	**0.009**	**0.010**	**0.014**	**0.014**	**0.013**
Boron	7440-42-8	0.05	mg/L	**0.43**	**0.43**	**0.14**	**0.12**	**0.32**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
				Client sampling date / time: 25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	----	0.01	mg/L	**0.08**	**0.08**	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
^ Nitrate as N	14797-55-8	0.01	mg/L	**1.31**	**1.28**	**4.01**	**3.72**	**5.19**
EK059G: NOX as N by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**1.40**	**1.37**	**4.01**	**3.72**	**5.19**
EN055: Ionic Balance								
^ Total Anions	----	0.01	meq/L	**73.8**	**73.9**	**81.5**	**61.0**	**82.8**
^ Total Cations	----	0.01	meq/L	**68.3**	**69.2**	**77.0**	**56.3**	**75.7**
^ Ionic Balance	----	0.01	%	**3.87**	**3.27**	**2.80**	**4.04**	**4.50**
EP071/080: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	**300**	**260**	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	5	µg/L	<5	<5	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
				Client sampling date / time: 25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EP074D: Fumigants - Continued								
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
Client sampling date / time				25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EP074F: Halogenated Aromatic Compounds - Continued								
1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	----	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	----	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	----	----	----
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	----	----	----
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	----	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	----	----	----
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	----	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	----	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	----	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	----	----	----
4-Chloro-3-Methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	----	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	----	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	----	----	----
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
				Client sampling date / time: 25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EP080/071: Total Petroleum Hydrocarbons								
^ C10 - C36 Fraction (sum)	----	50	µg/L	**300**	**260**	<50	<50	<50
EP080: BTEX								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**106**	**111**	----	----	----
Toluene-D8	2037-26-5	0.1	%	**106**	**106**	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	**102**	**107**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**38.7**	**33.9**	**31.8**	**23.0**	**36.2**
2-Chlorophenol-D4	93951-73-6	0.1	%	**101**	**89.6**	**79.3**	**71.9**	**99.8**
2.4.6-Tribromophenol	118-79-6	0.1	%	**99.8**	**102**	**81.8**	**80.2**	**112**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**110**	**90.6**	**86.2**	**78.4**	**105**
Anthracene-d10	1719-06-8	0.1	%	**110**	**95.1**	**91.0**	**79.7**	**104**
4-Terphenyl-d14	1718-51-0	0.1	%	**115**	**97.3**	**88.5**	**76.9**	**101**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**106**	**108**	**101**	**97.3**	**97.7**
Toluene-D8	2037-26-5	0.1	%	**106**	**104**	**102**	**89.0**	**90.4**
4-Bromofluorobenzene	460-00-4	0.1	%	**102**	**93.7**	**85.5**	**82.3**	**77.7**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/MW-2	A4/MW-7	A4/RB-2	A4/MW-5	A4/MW-6
				Client sampling date / time: 26-NOV-2009 15:00	26-NOV-2009 15:00	26-NOV-2009 15:00	27-NOV-2009 15:00	27-NOV-2009 15:00
				EM0912070-006	EM0912070-007	EM0912070-008	EM0912070-009	EM0912070-010
EA005: pH								
pH Value	----	0.01	pH Unit	**7.39**	**7.24**	----	**7.32**	**7.23**
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	**9330**	**11200**	----	**8120**	**9980**
EA015: Total Dissolved Solids								
^ Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	**5120**	**6910**	----	**4910**	**6150**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**366**	**438**	----	**238**	**400**
Total Alkalinity as CaCO3	----	1	mg/L	**366**	**438**	----	**238**	**400**
ED040F: Dissolved Major Anions								
Sulfate as SO4 2-	14808-79-8	1	mg/L	**396**	**458**	----	**211**	**473**
ED045P: Chloride by PC Titrator								
Chloride	16887-00-6	1	mg/L	**2900**	**2980**	----	**2400**	**3260**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**231**	**299**	----	**194**	**248**
Magnesium	7439-95-4	1	mg/L	**401**	**431**	----	**278**	**456**
Sodium	7440-23-5	1	mg/L	**994**	**1210**	----	**890**	**1210**
Potassium	7440-09-7	1	mg/L	**18**	**26**	----	**20**	**18**
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.003**	<0.001	<0.001	**0.001**
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	**0.094**	**0.080**	<0.001	**0.087**	**0.213**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	**0.002**	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001	**0.002**	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	**0.010**	**0.003**	<0.001	**0.012**	**0.014**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	<0.001	**0.009**	<0.001	**0.001**	**0.003**
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	**0.019**	**0.031**	<0.001	**0.020**	**0.019**
Selenium	7782-49-2	0.01	mg/L	<0.01	**0.01**	<0.01	<0.01	**0.01**
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	**0.041**	**0.018**	<0.005	**0.031**	**0.031**
Boron	7440-42-8	0.05	mg/L	**0.22**	**0.26**	<0.05	**0.32**	**0.30**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/MW-2	A4/MW-7	A4/RB-2	A4/MW-5	A4/MW-6
Client sampling date / time				26-NOV-2009 15:00	26-NOV-2009 15:00	26-NOV-2009 15:00	27-NOV-2009 15:00	27-NOV-2009 15:00
				EM0912070-006	EM0912070-007	EM0912070-008	EM0912070-009	EM0912070-010
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	----	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
^ Nitrate as N	14797-55-8	0.01	mg/L	**3.87**	**2.69**	----	**1.28**	**3.14**
EK059G: NOX as N by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**3.87**	**2.69**	----	**1.28**	**3.14**
EN055: Ionic Balance								
^ Total Anions	----	0.01	meq/L	**97.5**	**102**	----	**76.9**	**110**
^ Total Cations	----	0.01	meq/L	**88.2**	**104**	----	**71.8**	**103**
^ Ionic Balance	----	0.01	%	**5.02**	**0.69**	----	**3.44**	**3.30**
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	----	----	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	----	----	<0.5
beta-BHC	319-85-7	0.5	µg/L	----	----	----	----	<0.5
gamma-BHC	58-89-9	0.5	µg/L	----	----	----	----	<0.5
delta-BHC	319-86-8	0.5	µg/L	----	----	----	----	<0.5
Heptachlor	76-44-8	0.5	µg/L	----	----	----	----	<0.5
Aldrin	309-00-2	0.5	µg/L	----	----	----	----	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	----	----	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	----	----	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	----	----	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	----	----	<0.5
Dieldrin	60-57-1	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	----	----	----	----	<0.5
Endrin	72-20-8	0.5	µg/L	----	----	----	----	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	----	----	----	----	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	----	----	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDT	50-29-3	2	µg/L	----	----	----	----	<2
Endrin ketone	53494-70-5	0.5	µg/L	----	----	----	----	<0.5
Methoxychlor	72-43-5	2	µg/L	----	----	----	----	<2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	----	----	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	----	----	<0.5
Monocrotophos	6923-22-4	2	µg/L	----	----	----	----	<2

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/MW-2 Client sampling date / time: 26-NOV-2009 15:00 EM0912070-006	A4/MW-7 26-NOV-2009 15:00 EM0912070-007	A4/RB-2 26-NOV-2009 15:00 EM0912070-008	A4/MW-5 27-NOV-2009 15:00 EM0912070-009	A4/MW-6 27-NOV-2009 15:00 EM0912070-010
EP068B: Organophosphorus Pesticides (OP) - Continued								
Dimethoate	60-51-5	0.5	µg/L	----	----	----	----	<0.5
Diazinon	333-41-5	0.5	µg/L	----	----	----	----	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	----	----	<0.5
Parathion-methyl	298-00-0	2	µg/L	----	----	----	----	<2
Malathion	121-75-5	0.5	µg/L	----	----	----	----	<0.5
Fenthion	55-38-9	0.5	µg/L	----	----	----	----	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	----	----	<0.5
Parathion	56-38-2	2	µg/L	----	----	----	----	<2
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	----	----	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	----	----	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	----	----	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	----	----	----	----	<0.5
Prothiofos	34643-46-4	0.5	µg/L	----	----	----	----	<0.5
Ethion	563-12-2	0.5	µg/L	----	----	----	----	<0.5
Carbophenothion	786-19-6	0.5	µg/L	----	----	----	----	<0.5
Azinphos Methyl	----	0.5	µg/L	----	----	----	----	<0.5
EP071/080: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	<50
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/MW-2	A4/MW-7	A4/RB-2	A4/MW-5	A4/MW-6
				Client sampling date / time: 26-NOV-2009 15:00	26-NOV-2009 15:00	26-NOV-2009 15:00	27-NOV-2009 15:00	27-NOV-2009 15:00
				EM0912070-006	EM0912070-007	EM0912070-008	EM0912070-009	EM0912070-010
EP080/071: Total Petroleum Hydrocarbons								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	<50
EP080: BTEX								
Benzene	71-43-2	1	µg/L	<1	<1	----	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	----	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	<2	<2
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	----	----	----	**96.1**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	----	----	----	**95.9**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**34.2**	**33.0**	----	**30.0**	**33.7**
2-Chlorophenol-D4	93951-73-6	0.1	%	**91.8**	**91.1**	----	**84.3**	**94.6**
2.4.6-Tribromophenol	118-79-6	0.1	%	**100**	**97.7**	----	**66.0**	**108**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**108**	**93.3**	----	**89.4**	**101**
Anthracene-d10	1719-06-8	0.1	%	**102**	**93.6**	----	**88.8**	**103**
4-Terphenyl-d14	1718-51-0	0.1	%	**99.6**	**91.9**	----	**86.9**	**102**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**109**	**95.5**	----	**113**	**109**
Toluene-D8	2037-26-5	0.1	%	**103**	**91.5**	----	**93.5**	**85.2**
4-Bromofluorobenzene	460-00-4	0.1	%	**91.8**	**80.8**	----	**86.6**	**101**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/RB-3	A4/TB-2	----	----	----
				Client sampling date / time: 27-NOV-2009 15:00	27-NOV-2009 15:00	----	----	----
				EM0912070-011	EM0912070-012	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	130
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	53	140
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	86	115
Toluene-D8	2037-26-5	80	120
4-Bromofluorobenzene	460-00-4	88	110
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	94
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	10	123
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	86	115
Toluene-D8	2037-26-5	80	120
4-Bromofluorobenzene	460-00-4	88	110

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0912070**	Page	: 1 of 12
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 AREA 4 GME	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0104	Date Samples Received	: 27-NOV-2009
Sampler	: KB	Issue Date	: 08-DEC-2009
Order number	: 0779		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 12

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005: pH							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**----**	----	----	**01-DEC-2009**	25-NOV-2009	✗
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**----**	----	----	**01-DEC-2009**	26-NOV-2009	✗
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**----**	----	----	**01-DEC-2009**	27-NOV-2009	✗
EA010: Conductivity							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**----**	----	----	**01-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**----**	----	----	**01-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**----**	----	----	**01-DEC-2009**	25-DEC-2009	✓
EA015: Total Dissolved Solids							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**----**	----	----	**01-DEC-2009**	02-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**----**	----	----	**01-DEC-2009**	03-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**----**	----	----	**01-DEC-2009**	04-DEC-2009	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**03-DEC-2009**	09-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**03-DEC-2009**	10-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**03-DEC-2009**	11-DEC-2009	✓
ED040F: Dissolved Major Anions							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**01-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**01-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**01-DEC-2009**	25-DEC-2009	✓
ED045P: Chloride by PC Titrator							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**03-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**03-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**03-DEC-2009**	25-DEC-2009	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**01-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**01-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**01-DEC-2009**	25-DEC-2009	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**02-DEC-2009**	24-MAY-2010	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
A4/MW-1, A4/MW-2, A4/MW-7, A4/RB-2	**26-NOV-2009**	---	---	----	**02-DEC-2009**	25-MAY-2010	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
A4/MW-5, A4/MW-6, A4/RB-3, A4/TB-2	**27-NOV-2009**	---	---	----	**02-DEC-2009**	26-MAY-2010	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**03-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
A4/MW-1, A4/MW-2, A4/MW-7, A4/RB-2	**26-NOV-2009**	---	---	----	**03-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
A4/MW-5, A4/MW-6, A4/RB-3, A4/TB-2	**27-NOV-2009**	---	---	----	**03-DEC-2009**	25-DEC-2009	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**27-NOV-2009**	27-NOV-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**27-NOV-2009**	28-NOV-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**27-NOV-2009**	29-NOV-2009	✓
EK059G: NOX as N by Discrete Analyser							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**27-NOV-2009**	27-NOV-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**27-NOV-2009**	28-NOV-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**27-NOV-2009**	29-NOV-2009	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved							
A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved							
A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
EP071/080: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**01-DEC-2009**	02-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**01-DEC-2009**	03-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
Amber VOC Vial- NaHSO4 or H2SO4							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**---**	---	----	**07-DEC-2009**	10-DEC-2009	✓
Amber VOC Vial- NaHSO4 or H2SO4							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**---**	---	----	**07-DEC-2009**	11-DEC-2009	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074D: Fumigants							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074G: Trihalomethanes							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved								
A1/MW-8,	A1/QS-1	**25-NOV-2009**	**01-DEC-2009**	02-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved								
A1/MW-8, A4/MW-3,	A1/QS-1, A4/MW-4	**25-NOV-2009**	**01-DEC-2009**	02-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved								
A4/MW-1, A4/MW-7	A4/MW-2,	**26-NOV-2009**	**01-DEC-2009**	03-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved								
A4/MW-5,	A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved								
A1/MW-8, A4/MW-3,	A1/QS-1, A4/MW-4	**25-NOV-2009**	**01-DEC-2009**	02-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved								
A4/MW-1, A4/MW-7	A4/MW-2,	**26-NOV-2009**	**01-DEC-2009**	03-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved								
A4/MW-5,	A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
EP080: BTEX								
Amber VOC Vial- NaHSO4 or H2SO4								
A1/MW-8, A4/MW-3,	A1/QS-1, A4/MW-4	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
Amber VOC Vial- NaHSO4 or H2SO4								
A4/MW-1, A4/MW-7	A4/MW-2,	**26-NOV-2009**	**---**	---	----	**07-DEC-2009**	10-DEC-2009	✓
Amber VOC Vial- NaHSO4 or H2SO4								
A4/MW-5,	A4/MW-6	**27-NOV-2009**	**---**	---	----	**07-DEC-2009**	11-DEC-2009	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Alkalinity by PC Titrator	ED037-P	4	39	**10.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Chloride by PC Titrator	ED045-P	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	3	25	**12.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	2	16	**12.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	37	**10.8**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Anions - Dissolved	ED040F	4	30	**13.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	2	17	**11.8**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	36	**11.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	4	30	**13.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
pH	EA005	3	29	**10.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids	EA015	4	33	**12.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	15	**6.7**	**10.0**	×	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	11	**18.2**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	4	**25.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	2	39	**5.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Chloride by PC Titrator	ED045-P	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	2	25	**8.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	16	**6.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	**5.4**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Anions - Dissolved	ED040F	2	30	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	1	17	**5.9**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	2	30	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	**8.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	3	**33.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids	EA015	2	33	**6.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	15	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Chloride by PC Titrator	ED045-P	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	2	25	**8.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	16	**6.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	**5.4**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Major Anions - Dissolved	ED040F	2	30	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	1	17	**5.9**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	2	30	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	**8.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	3	**33.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids	EA015	2	33	**6.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	15	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Chloride by PC Titrator	ED045-P	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	16	**6.3**	**5.0**	✓	ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	**5.4**	**5.0**	✓	ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	**5.6**	**5.0**	✓	ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	2	30	**6.7**	**5.0**	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	15	**6.7**	**5.0**	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	4	**25.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH	EA005	WATER	APHA 21st ed. 4500 H+ B. pH of water samples is determined by ISE either manually or by automated pH meter. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Conductivity	EA010	WATER	APHA 21st ed., 2510 B Conductivity is determined by ISE, either manually or automated measurement. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Dissolved Solids	EA015	WATER	APHA 21st ed., 2540C A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Alkalinity by PC Titrator	ED037-P	WATER	APHA 21st ed., 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Major Anions - Dissolved	ED040F	WATER	APHA 21st ed., 3120. The 0.45um filtered samples are determined by ICP/AES for Sulfur and/or Silcon content and reported as Sulfate and/or Silica after conversion by gravimetric factor.
Chloride by PC Titrator	ED045-P	WATER	APHA 21st ed., 4500 Cl - B. Automated Silver Nitrate titration.
Major Cations - Dissolved	ED093F	WATER	APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises the 0.45um filtered sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): Samples are 0.45 um filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45 um filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrite as N by Discrete Analyser	EK057G	WATER	APHA 21st ed., 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrate as N by Discrete Analyser	EK058G	WATER	APHA 21st ed., 4500-NO3- F. Nitrate is reduced to nitrite by way of a cadmium reduction column followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	APHA 21st ed., 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Cadmium Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Ionic Balance by PCT and ICPAES	EN055	WATER	APHA 21st Ed. 1030F. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Analytical Methods	Method	Matrix	Method Descriptions
Pesticides by GCMS	EP068	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP074A: Monocyclic Aromatic Hydrocarbons	1367734-001	----	**Styrene**	100-42-5	78.6 %	79-115%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED045P: Chloride by PC Titrator	EM0912070-001	A1/MW-8	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK059G: NOX as N by Discrete Analyser	EM0912070-010	A4/MW-6	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP080/071: Total Petroleum Hydrocarbons	EM0912070-002	A1/QS-1	**C6 - C9 Fraction**	----	137 %	70-130%	**Recovery greater than upper control limit**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP080S: TPH(V)/BTEX Surrogates	EM0912070-003	A4/MW-3	**4-Bromofluorobenzene**	460-00-4	85.5 %	88-110 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EM0912070-005	A4/MW-1	**4-Bromofluorobenzene**	460-00-4	77.7 %	88-110 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EM0912070-007	A4/MW-7	**4-Bromofluorobenzene**	460-00-4	80.8 %	88-110 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EM0912070-009	A4/MW-5	**4-Bromofluorobenzene**	460-00-4	86.6 %	88-110 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EM0912070-004	A4/MW-4	**4-Bromofluorobenzene**	460-00-4	82.3 %	88-110 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **WATER**

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005: pH							
Clear Plastic Bottle - Natural							
A1/MW-8, A4/MW-3,	A1/QS-1, A4/MW-4	----	----	----	01-DEC-2009	25-NOV-2009	**6**
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-7	A4/MW-2,	----	----	----	01-DEC-2009	26-NOV-2009	**5**
Clear Plastic Bottle - Natural							
A4/MW-5,	A4/MW-6	----	----	----	01-DEC-2009	27-NOV-2009	**4**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
TPH - Semivolatile Fraction	1	15	6.7	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

QUALITY CONTROL REPORT

Work Order	: **EM0912070**	Page	: 1 of 16
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 AREA 4 GME	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0104	Date Samples Received	: 27-NOV-2009
Sampler	: KB	Issue Date	: 08-DEC-2009
Order number	: 0779		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 12

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Nancy Wang	Instrument Chemist	Organics
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA005: pH (QC Lot: 1180231)									
EM0912033-003	Anonymous	EA005: pH Value	----	0.01	pH Unit	7.29	7.32	0.4	0% - 20%
EM0912060-001	Anonymous	EA005: pH Value	----	0.01	pH Unit	7.43	7.45	0.3	0% - 20%
EA005: pH (QC Lot: 1180232)									
EM0912070-004	A4/MW-4	EA005: pH Value	----	0.01	pH Unit	7.20	7.14	0.8	0% - 20%
EA010: Conductivity (QC Lot: 1180233)									
EM0912033-003	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	216	218	0.9	0% - 20%
EM0912061-003	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	6340	6370	0.5	0% - 20%
EA010: Conductivity (QC Lot: 1180234)									
EM0912070-006	A4/MW-2	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	9330	9340	0.1	0% - 20%
EA015: Total Dissolved Solids (QC Lot: 1179882)									
EM0912043-005	Anonymous	EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	6150	6170	0.3	0% - 20%
EM0912061-002	Anonymous	EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	320	314	1.9	0% - 20%
EA015: Total Dissolved Solids (QC Lot: 1179883)									
EM0912070-002	A1/QS-1	EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	4900	4820	1.6	0% - 20%
EM0912110-001	Anonymous	EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	13300	13000	2.6	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 1181474)									
EM0911860-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	486	486	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	490	486	0.6	0% - 20%
EM0912040-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	70	70	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	70	70	0.0	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 1181479)									
EM0912070-007	A4/MW-7	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	438	439	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	438	439	0.0	0% - 20%
EM0912161-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	90	85	6.5	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	90	85	6.5	0% - 20%
ED040F: Dissolved Major Anions (QC Lot: 1179687)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
ED040F: Dissolved Major Anions (QC Lot: 1179687) - continued									
EM0911988-001	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	100	101	0.0	0% - 20%
EM0912043-001	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
ED040F: Dissolved Major Anions (QC Lot: 1179692)									
EM0912070-001	A1/MW-8	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	354	360	1.8	0% - 20%
EM0912110-001	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	14000	14500	3.2	0% - 20%
ED045P: Chloride by PC Titrator (QC Lot: 1181478)									
EM0912067-001	Anonymous	ED045-P: Chloride	16887-00-6	1	mg/L	264	270	1.9	0% - 20%
EM0912070-007	A4/MW-7	ED045-P: Chloride	16887-00-6	1	mg/L	2980	3500	16.2	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 1179691)									
EM0912052-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	46	47	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	249	250	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1600	1600	0.2	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	21	21	0.0	0% - 20%
EM0912070-001	A1/MW-8	ED093F: Calcium	7440-70-2	1	mg/L	180	177	1.3	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	177	179	1.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1010	1020	0.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	24	24	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1181499)									
EM0911898-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.032	0.031	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.021	0.022	0.0	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.644	0.651	1.1	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.002	0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.022	0.022	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	0.05	0.04	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	5.64	5.52	2.2	0% - 20%
EM0912053-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.044	0.043	0.0	0% - 20%
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1181499) - continued									
EM0912053-006	Anonymous	EG020A-F: Barium	7440-39-3	0.001	mg/L	0.319	0.323	1.1	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.087	0.087	0.0	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.015	0.015	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.18	0.18	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1181500)									
EM0912070-006	A4/MW-2	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.094	0.094	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.010	0.010	0.0	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.019	0.018	0.0	0% - 50%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.041	0.040	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.22	0.22	0.0	No Limit
EM0912161-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.167	0.167	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1181500) - continued									
EM0912161-001	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.172	0.180	4.8	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.043	0.042	0.0	0% - 20%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.014	0.013	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 1181498)									
EM0911898-005	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM0912070-007	A4/MW-7	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1179690)									
EM0912052-001	Anonymous	EK057G: Nitrite as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EM0912070-001	A1/MW-8	EK057G: Nitrite as N	----	0.01	mg/L	0.08	0.08	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1179693)									
EM0912070-001	A1/MW-8	EK057G: Nitrite as N	----	0.01	mg/L	0.08	<0.01	157	No Limit
EM0912110-001	Anonymous	EK057G: Nitrite as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: NOX as N by Discrete Analyser (QC Lot: 1182175)									
EM0911898-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.14	0.13	0.0	0% - 50%
EM0912032-012	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	6.67	6.72	0.7	0% - 20%
EK059G: NOX as N by Discrete Analyser (QC Lot: 1182176)									
EM0912070-009	A4/MW-5	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	1.28	1.26	1.0	0% - 20%
EM0912096-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074C: Sulfonated Compounds (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 1184506) - continued									
EM0912070-001	A1/MW-8	EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1180158)									
EM0912080-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	180	<200	9.1	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<100	66.7	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	140	<100	36.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1184507)									
EM0912070-001	A1/MW-8	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EM0912127-013	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEX (QC Lot: 1184507)									
EM0912070-001	A1/MW-8	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
EM0912127-013	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA010: Conductivity (QCLot: 1180233)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1413 µS/cm	101	98	102
EA010: Conductivity (QCLot: 1180234)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1413 µS/cm	101	98	102
EA015: Total Dissolved Solids (QCLot: 1179882)								
EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	<1	2000 mg/L	103	97	107
EA015: Total Dissolved Solids (QCLot: 1179883)								
EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	<1	2000 mg/L	104	97	107
ED037P: Alkalinity by PC Titrator (QCLot: 1181474)								
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	----	200 mg/L	111	86	118
ED037P: Alkalinity by PC Titrator (QCLot: 1181479)								
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	----	200 mg/L	110	86	118
ED040F: Dissolved Major Anions (QCLot: 1179687)								
ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	300 mg/L	97.7	83	121
ED040F: Dissolved Major Anions (QCLot: 1179692)								
ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	300 mg/L	104	83	121
ED045P: Chloride by PC Titrator (QCLot: 1181478)								
ED045-P: Chloride	16887-00-6	1	mg/L	<1	1000 mg/L	102	81.7	120
ED093F: Dissolved Major Cations (QCLot: 1179691)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	94.1	90	124
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	105	82	122
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	84	118
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	103	83	121
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181499)								
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	96.6	82	126
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	89	109
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	80.8	73	123
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	103	85	109
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.4	92	112
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	88	110
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	104	86	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	106	89	113
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	92	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.3	88	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181499) - continued								
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	94.8	86	106
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	107	87	111
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	86.6	84	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	97.0	90	112
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	105	88	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	88	116
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	97.7	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181500)								
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	100	82	126
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	89	109
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	95.3	73	123
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	104	85	109
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	92	112
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	88	110
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	105	86	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	105	89	113
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	92	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.3	88	110
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	95.1	86	106
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	106	87	111
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	89.0	84	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	97.6	90	112
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	105	88	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	88	116
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	109	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 1181498)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	98.1	76	124
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1179690)								
EK057G: Nitrite as N	----	0.01	mg/L	<0.01	0.5 mg/L	103	89.9	105
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1179693)								
EK057G: Nitrite as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	89.9	105
EK059G: NOX as N by Discrete Analyser (QCLot: 1182175)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	96.6	76.5	120
EK059G: NOX as N by Discrete Analyser (QCLot: 1182176)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	80.8	76.5	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 1180157)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	86.7	54.4	126
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	75.1	55	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1180157) - continued								
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	82.4	54.5	131
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	89.0	54.5	126
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	82.8	56.2	131
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	80.2	56.4	126
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	80.3	61.7	123
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	81.3	62.4	126
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	82.6	62.1	126
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	82.7	62.9	129
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	81.8	58.2	130
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	81.2	61.4	129
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	84.8	63.2	128
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	81.0	61.2	134
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	84.4	64.1	129
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	83.5	64.5	128
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	117	58.5	132
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	81.8	60.2	134
EP068: 4.4`-DDT	50-29-3	2.0	µg/L	<2	5 µg/L	81.0	51.8	138
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	82.5	62.4	130
EP068: Methoxychlor	72-43-5	2.0	µg/L	<2	5 µg/L	84.3	45.9	139
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1180157)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	78.1	39.9	137
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	76.1	45.1	133
EP068: Monocrotophos	6923-22-4	2.0	µg/L	<2	5 µg/L	23.2	15	93.5
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	102	31.7	129
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	75.5	59.1	125
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	70.6	60.6	126
EP068: Parathion-methyl	298-00-0	2.0	µg/L	<2	5 µg/L	69.8	53.3	133
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	70.9	57.3	135
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	75.1	59.5	128
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	71.9	60.3	130
EP068: Parathion	56-38-2	2.0	µg/L	<2	5 µg/L	69.9	53.4	134
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	72.4	59.7	128
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	73.1	54.8	139
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	93.0	60.1	129
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	68.7	44.8	141
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	72.4	60	129
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	73.6	58.2	132
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	72.7	58.9	132
EP068: Azinphos Methyl	----	0.5	µg/L	<0.5	5 µg/L	65.6	35.5	153

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Recovery Limits (%)
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1184506)								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	# 78.6	79	115
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	20 µg/L	79.0	77	115
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	20 µg/L	96.5	73	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	20 µg/L	97.7	77	117
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	20 µg/L	96.5	74	118
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	20 µg/L	96.4	77	117
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	20 µg/L	96.3	78	118
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	20 µg/L	98.5	71	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	20 µg/L	98.0	64	120
EP074B: Oxygenated Compounds (QCLot: 1184506)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	200 µg/L	93.5	50	138
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	200 µg/L	104	73	135
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	200 µg/L	109	73	137
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	200 µg/L	83.8	72	130
EP074C: Sulfonated Compounds (QCLot: 1184506)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	20 µg/L	99.6	74	128
EP074D: Fumigants (QCLot: 1184506)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	20 µg/L	104	69	123
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	20 µg/L	113	82	122
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	20 µg/L	115	82	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	20 µg/L	105	80	122
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	20 µg/L	83.4	80	120
EP074E: Halogenated Aliphatic Compounds (QCLot: 1184506)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	200 µg/L	90.9	58	148
EP074: Chloromethane	74-87-3	50	µg/L	<50	200 µg/L	111	66	138
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	123	63	159
EP074: Bromomethane	74-83-9	50	µg/L	<50	200 µg/L	104	68	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	200 µg/L	107	74	128
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	200 µg/L	108	74	130
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	106	76	126
EP074: Iodomethane	74-88-4	5	µg/L	<5	20 µg/L	74.8	67	133
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	107	78	122
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	20 µg/L	103	80	122
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	104	82	122
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	115	78	122
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	20 µg/L	109	77	121
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	116	74	126
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	106	81	125

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 1184506) - continued								
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	110	76	124
EP074: Dibromomethane	74-95-3	5	µg/L	<5	20 µg/L	102	81	127
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	84.3	80	120
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	20 µg/L	87.0	82	120
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	80.4	71	125
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	84.0	77	117
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	20 µg/L	80.6	68	124
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	20 µg/L	76.9	70	124
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	89.3	76	126
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	20 µg/L	88.6	74	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	20 µg/L	106	57	131
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	20 µg/L	98.7	73	133
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	20 µg/L	105	51	121
EP074F: Halogenated Aromatic Compounds (QCLot: 1184506)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	79.6	78	116
EP074: Bromobenzene	108-86-1	5	µg/L	<5	20 µg/L	100	80	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	20 µg/L	95.9	76	118
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	20 µg/L	96.7	74	116
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	20 µg/L	97.0	75	115
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	20 µg/L	96.8	76	114
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	20 µg/L	102	79	115
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	20 µg/L	103	56	118
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	20 µg/L	108	67	117
EP074G: Trihalomethanes (QCLot: 1184506)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	108	82	122
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	20 µg/L	115	81	125
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	20 µg/L	93.4	79	123
EP074: Bromoform	75-25-2	5	µg/L	<5	20 µg/L	95.3	71	129
EP075(SIM)A: Phenolic Compounds (QCLot: 1180159)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	35.2	12.4	60
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	82.3	28.2	119
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	65.9	32.7	119
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	5 µg/L	66.9	27.1	119
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	99.2	50.2	147
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	98.4	31.2	142
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	94.2	44	143
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	93.8	45.4	131
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	91.8	45.2	133
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	85.9	45.8	125

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 1180159) - continued								
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	94.6	45.7	126
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	5 µg/L	49.6	45.3	149
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1180159)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	94.4	50	131
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	83.4	49.3	121
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	102	56.8	129
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	99.7	58.4	127
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	94.0	62.2	131
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	97.3	61.1	128
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	95.6	61.2	132
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	98.0	64	133
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	98.3	64.3	138
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	98.1	60.2	133
EP075(SIM): Benzo(b)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	97.1	61.6	142
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	104	55.1	133
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	96.4	57.7	133
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	98.4	64.2	135
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	95.2	63.2	136
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	97.8	64.3	136
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1180158)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	798 µg/L	72.7	64	124
EP071: C15 - C28 Fraction	----	100	µg/L	<100	804 µg/L	82.8	70	130
EP071: C29 - C36 Fraction	----	50	µg/L	<50	800 µg/L	87.9	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1184507)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	320 µg/L	91.9	71	131
EP080: BTEX (QCLot: 1184507)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.8	71	131
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	90.8	70	130
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	83.9	70	130
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	90.2	69	129
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	89.6	70	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED045P: Chloride by PC Titrator (QCLot: 1181478)							
EM0912070-001	A1/MW-8	ED045-P: Chloride	16887-00-6	490 mg/L	# Not Determined	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181499)							
EM0911898-005	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	121	70	130
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	89.2	70	130
		EG020A-F: Barium	7440-39-3	0.2 mg/L	115	70	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	103	70	130
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	110	70	130
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	122	70	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	113	70	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	107	70	130
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	95.4	70	130
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	118	70	130
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	116	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	102	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181500)							
EM0912070-006	A4/MW-2	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	118	70	130
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	108	70	130
		EG020A-F: Barium	7440-39-3	0.2 mg/L	110	70	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	113	70	130
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	107	70	130
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	117	70	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	109	70	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	104	70	130
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	105	70	130
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	111	70	130
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	115	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	108	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 1181498)							
EM0911965-001	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	99.3	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1179690)							
EM0912043-002	Anonymous	EK057G: Nitrite as N	----	0.5 mg/L	130	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1179693)							
EM0912070-002	A1/QS-1	EK057G: Nitrite as N	----	0.5 mg/L	112	70	130
EK059G: NOX as N by Discrete Analyser (QCLot: 1182175)							

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: Spike Recovery (%) MS	Matrix Spike (MS) Report: Recovery Limits (%) Low	Matrix Spike (MS) Report: Recovery Limits (%) High
EK059G: NOX as N by Discrete Analyser (QCLot: 1182175) - continued							
EM0911980-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	103	70	130
EK059G: NOX as N by Discrete Analyser (QCLot: 1182176)							
EM0912070-010	A4/MW-6	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 1184506)							
EM0912070-002	A1/QS-1	EP074: 1.1-Dichloroethene	75-35-4	20 µg/L	79.0	70	130
		EP074: Trichloroethene	79-01-6	20 µg/L	112	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 1184506)							
EM0912070-002	A1/QS-1	EP074: Chlorobenzene	108-90-7	20 µg/L	121	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1180158)							
EM0912080-002	Anonymous	EP071: C10 - C14 Fraction	----	798 µg/L	81.7	70	130
		EP071: C15 - C28 Fraction	----	804 µg/L	94.8	70	130
		EP071: C29 - C36 Fraction	----	800 µg/L	82.2	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1184507)							
EM0912070-002	A1/QS-1	EP080: C6 - C9 Fraction	----	280 µg/L	# 137	70	130
EP080: BTEX (QCLot: 1184507)							
EM0912070-002	A1/QS-1	EP080: Benzene	71-43-2	20 µg/L	100	70	130
		EP080: Toluene	108-88-3	20 µg/L	87.0	70	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **EM0912070**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 AREA 4 GME	Page	: 1 of 3
Order number	: 0779		
C-O-C number	: 0104	Quote number	: EM2009OTEK0282 (ME/281/09)
Site	: ----		
Sampler	: KB	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 27-NOV-2009	Issue Date	: 01-DEC-2009 08:34
Client Requested Due Date	: 07-DEC-2009	Scheduled Reporting Date	: **07-DEC-2009**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 9-10 - Ice present
No. of coolers/boxes	: 2	No. of samples received	: 12
Sercurity Seal	: Intact.	No. of samples analysed	: 12

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times with the exception for pH analysis on those samples collected 25/11/09 and 26/11/09.**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- **Samples A1/MW-8 and A1/QS-1 were received labelled A4/MW-8 and A4/QS-1.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EA005: pH pH	WATER - EA010 Conductivity	WATER - EA015 Total Dissolved Solids	WATER - EG020F Dissolved Metals by ICPMS	WATER - EN055 Ionic Balance	WATER - EP074 (water) Volatile Organic Compounds	WATER - NT-01 Major Cations (Ca, Mg, Na, K)	WATER - NT-02 (EM) Major Anions (Cl, SO4, Alkalinity)
EM0912070-001	25-NOV-2009 15:00	A1/MW-8	✓	✓	✓	✓	✓	✓	✓	✓
EM0912070-002	25-NOV-2009 15:00	A1/QS-1	✓	✓	✓	✓	✓	✓	✓	✓
EM0912070-003	25-NOV-2009 15:00	A4/MW-3	✓	✓	✓	✓	✓		✓	✓
EM0912070-004	25-NOV-2009 15:00	A4/MW-4	✓	✓	✓	✓	✓		✓	✓
EM0912070-005	26-NOV-2009 15:00	A4/MW-1	✓	✓	✓	✓	✓		✓	✓
EM0912070-006	26-NOV-2009 15:00	A4/MW-2	✓	✓	✓	✓	✓		✓	✓
EM0912070-007	26-NOV-2009 15:00	A4/MW-7	✓	✓	✓	✓	✓		✓	✓
EM0912070-008	26-NOV-2009 15:00	A4/RB-2				✓				
EM0912070-009	27-NOV-2009 15:00	A4/MW-5	✓	✓	✓	✓	✓		✓	✓
EM0912070-010	27-NOV-2009 15:00	A4/MW-6	✓	✓	✓	✓	✓		✓	✓
EM0912070-011	27-NOV-2009 15:00	A4/RB-3				✓				
EM0912070-012	27-NOV-2009 15:00	A4/TB-2				✓				

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - NT-04 Nitrite and Nitrate	WATER - W-03A 17 Metals	WATER - W-04 TPH/BTEX	WATER - W-07 TPH/BTEX/PAH	WATER - W-12 OC/OP Pesticides	WATER - W-14A PAH/Phenols (SIM)
EM0912070-001	25-NOV-2009 15:00	A1/MW-8	✓	✓	✓			✓
EM0912070-002	25-NOV-2009 15:00	A1/QS-1	✓	✓	✓			✓
EM0912070-003	25-NOV-2009 15:00	A4/MW-3	✓	✓		✓		
EM0912070-004	25-NOV-2009 15:00	A4/MW-4	✓	✓		✓		
EM0912070-005	26-NOV-2009 15:00	A4/MW-1	✓	✓		✓		
EM0912070-006	26-NOV-2009 15:00	A4/MW-2	✓	✓		✓		
EM0912070-007	26-NOV-2009 15:00	A4/MW-7	✓	✓		✓		
EM0912070-008	26-NOV-2009 15:00	A4/RB-2		✓				
EM0912070-009	27-NOV-2009 15:00	A4/MW-5	✓	✓		✓		
EM0912070-010	27-NOV-2009 15:00	A4/MW-6	✓	✓		✓	✓	
EM0912070-011	27-NOV-2009 15:00	A4/RB-3		✓				
EM0912070-012	27-NOV-2009 15:00	A4/TB-2		✓				

Requested Deliverables

MR GURDEEP KHOSA

- *AU Certificate of Analysis - NATA (COA)	Email	gkhosa@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gkhosa@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gkhosa@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	gkhosa@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	gkhosa@otek.com.au
- Default - Chain of Custody (COC)	Email	gkhosa@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	gkhosa@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	gkhosa@otek.com.au

MR KAYNE BEGBIE

- *AU Certificate of Analysis - NATA (COA)	Email	kbegbie@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	kbegbie@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	kbegbie@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	kbegbie@otek.com.au
- Default - Chain of Custody (COC)	Email	kbegbie@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	kbegbie@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	kbegbie@otek.com.au

MR LUKE DAL LAGO

- *AU Certificate of Analysis - NATA (COA)	Email	ldallago@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ldallago@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ldallago@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	ldallago@otek.com.au
- Default - Chain of Custody (COC)	Email	ldallago@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	ldallago@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	ldallago@otek.com.au

MR TOM SANTWYK-ANDERSON

- *AU Certificate of Analysis - NATA (COA)	Email	tsantwyk-anderson@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	tsantwyk-anderson@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	tsantwyk-anderson@otek.com.au
- Default - Chain of Custody (COC)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	tsantwyk-anderson@otek.com.au

MS EMILY BURKE

- *AU Certificate of Analysis - NATA (COA)	Email	eburke@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	eburke@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	eburke@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	eburke@otek.com.au
- Default - Chain of Custody (COC)	Email	eburke@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	eburke@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	eburke@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA (COA)	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	vicreception@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	vicreception@otek.com.au
- Default - Chain of Custody (COC)	Email	vicreception@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	vicreception@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	vicreception@otek.com.au

COC NUMBER: 0104

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
gkhosa@otek.com.au
kbeattie@otek.com.au

OTEK AUSTRALIA PTY LTD

Page 1 of 1

LAB ALS
ADDRESS Westall Rd Springvale
LAB CONTACT
PHONE

PROJECT # 3106004/1001
PROJECT NAME Area 4 GME
COLLECTORS NAME Kayne
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL
FINAL REPORT BY: 1 week T/A
LAB QUOTE REF: ME/281/09
OTEK PO No.: 0779
REMARKS

	SAMPLE ID	DEPTH (metres)	LAB #	MATRIX	PRESERVATION METHOD				SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE											
				Soil / Water / Sludge / Air	ICE	ACIDIFIED	OTHER	NONE			Metals (M10)	BTEX, TPH, PAH	TDS, EC, PH,	Nitrate, Nitrite	Alkalinity, Sulphate, Total Cyanide	Anions	Chloride	Ca, Mg, Na, K	VOCs, Phenols	OC/OPs		
	DISCRETE SAMPLE REQUEST:																					
1	A4 A1/MW-8			W	X	X			25/11/09	S									X			
2	A4 A1/QS-1			W	X	X			"	S									X			
3	A4/MW-3			W	X	X			"	S												
4	A4/MW-4			W	X	X			"	S												
5	A4/MW-1			W	X	X			26/11/09	S												
6	A4/MW-2			W	X	X			"	S												
7	A4/MW-7			W	X	X			"	S												
8	A4/RB-2			W	X	X			"	1	X											
9	A4/MW-5			W	X	X			27/11/09	S										X		
10	A4/MW-6			W	X	X			"	S												
11	A4/RB-3			W	X	X			"	1	X											
12	A4/TB-2			W	X	X			"	1	X											

Environmental Division
Melbourne
Work Order
EM0912070

Telephone : +61-3-8549 9600

SAMPLES SENT TO LAB
MICRO NITRATE FERROUS
OTHER Rec 27/11/09

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Kayne Beattie (Signature)

Date 27/11/09

Additional Comments:

Relinquished by: Kayne B	Date 27/11	Time 1448	Received by: 438	Date 3.15pm 27/11	Time	Custody Seals Intact? Yes / No / NA	
Relinquished by: 438	Date	Time 4.40pm	Received by: RM / ALS 4.40	Date	Time	Samples Received Chilled? Yes / No	
Relinquished by:	Date	Time	Received by: 27/11/09 10.12.0	Date	Time		

Please provide electronic results in ESDAT format

COC NUMBER: 0104

LAB ALS
ADDRESS Westall Rd
LAB CONTACT Springvale
PHONE

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
gkhosa@otek.com.au
kbeglie

OTEK AUSTRALIA PTY LTD

PROJECT #	PROJECT NAME
3106004/1001	Area 4 GME

COLLECTORS NAME	LAB JOB #
Kayne	

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL

FINAL REPORT BY: 1 week T/A

LAB QUOTE REF: ME/281/09 | OTEK PO No.: 0779

	SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	Metals (Mn10)	BTEX, TPH, PAH	TDS, EC, pH	Nitrate, Nitrite	Alkalinity, Sulphate	Total Cyanide	Chloride	Ca, Mg, Na, K	VOC's, Phenols	OC / OPs	REMARKS
DISCRETE SAMPLE REQUEST:																					
1	A4 A1/MW-8			W	X	X			25/11/09	S									X		
2	A4 A1/QS-1			W	X	X			"	S									X		
3	A4/MW-3			W	X	X			"	S											
4	A4/MW-4			W	X	X			"	S											
5	A4/MW-1			W	X	X			26/11/09	S											
6	A4/MW-2			W	X	X			"	S											
7	A4/MW-7			W	X	X			"	S											
8	A4/RB-2			W	X	X			"	1	X										
9	A4/MW-5			W	X	X			27/11/09	S											
10	A4/MW-6			W	X	X			"	S										X	
11	A4/RB-3			W	X	X			"	1	X										
12	A4/TB-2			W	X	X			"	1	X										

Environmental Division
Melbourne
Work Order
EM0912070

Telephone : +61-3-8549 9600

SAMPLES SENT TO LAB
MICRO NITRATE FERROUS
OTHER Rec 27/11/09

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Kayne Beglie (Signature)

Date 27/11/09

Relinquished by:	Date	Time	Received by:	Date	Time
Kayne B	27/11	1448	438	3.15pm	27/11
438		4.40pm	RL / Ahs 440		
			27/11/09 10.12.0		

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

Additional Comments:

Please provide electronic results in ESDAT format

DW 30/11/09

Ranil Weerakkody

From: Kayne Begbie [kbegbie@otek.com.au]
Sent: Monday, 30 November 2009 10:00 AM
To: Samples Melbourne
Subject: FW: Scanned from MFP-06937376 30/11/2009 08:53

Attachments: DOC301109.pdf

DOC301109.pdf (7 MB)

Hi Ranil,

please find the correct sample names circled on the attached COC's. the names on the bottles are incorrect!

cheers, kayne

Kayne Begbie - Project Manager

T: 03 9095 1925 (Direct) T: 03 9525 5155 (Switch) F: 03 9593 8555

M: 0401 863 379 E: kbegbie@otek.com.au W: www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

-----Original Message-----
From: OTEK Australia St Kilda [mailto:toshiba@otek.com.au]
Sent: Monday, 30 November 2009 9:53 AM
To: Kayne Begbie
Subject: Scanned from MFP-06937376 30/11/2009 08:53

Scanned from MFP-06937376.
Date: 30/11/2009 08:53
Pages:2
Resolution:400x400 DPI

COC NUMBER:	0104

LAB ALS
ADDRESS [illegible] Rd
LAB CONTACT Springvale
PHONE

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
gk[illegible]@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT #	PROJECT NAME
3106004 1001	[illegible] 4 GME

COLLECTORS NAME	LAB JOB #
Kaye	

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: 1 week T/A

LAB QUOTE REF:	OTEK PO No.:
ME/[illegible]/09	0379

ANALYSIS REQUIRED & METHOD CODE

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX Soil Water Sludge Air	ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	Metals (NEPM)	BTEX - TPH PAH	TDS, EC, pH	Nitrate, Nitrite	Alkalinity, Sulphate	Ammonia, Total [illegible]	Chloride	Ca Mg Na K						REMARKS
DISCRETE SAMPLE REQUEST:																							
A1/MW-3			W	X	X			25/11/09	5									X					
A1/QC-1			W	X	X			"	5									X					
A1/MW-2			W	X	X			"	5														
A1/MW-4			W	X	X			"	5														
A1/MW-1			W	X	X			26/11/09	5														
A1/MW-1			W	X	X			"	5														
A4/MW-7			W	X	X			"	5														
A1/RB-1			W	X	X			"	1	X													
A1/MW-5			W	X	X			27/11/09	5														
A4/MW-6			W	X	X			"	5										X				
A4/RB-2			W	X	X			"	1	X													
A4/TB-2			W	X	X			"	1	X													

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print)	(Signature)	Date
K[illegible] [illegible]	[signature]	[illegible]/11/09

Relinquished by:	Date	Time	Received by:	Date	Time	
Kaye	27/11	14:00				Custody Seals Intact? Yes / No / NA
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled? Yes / No
Relinquished by:	Date	Time	Received by:	Date	Time	

Additional Comments:

Please provide electronic results in ESDAT format

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

OTEK Australia
INSPECTION VERIFICATION RECORD
PASS ✓ | FAIL
NAME (PRINT) CATHERINE CRILLY
SIGN
8 MARCH 2011

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM1011259**	Page	: 1 of 3
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Sarah Hodgson
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: sarah.hodgson@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: 03 8549 9652
Facsimile	: +61 03 9593 8555	Facsimile	: 03 8549 9626
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 34636		
C-O-C number	: 0264	Date Samples Received	: 14-OCT-2010
Sampler	: LD	Issue Date	: 22-OCT-2010
Site	: ---		
		No. of samples received	: 2
Quote number	: ME/281/09	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
KEN HALL	Analyst	Newcastle

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **'Am' Amosite (brown asbestos)**
- **'Ch' Chrysotile (white asbestos)**
- **'Cr' Crocidolite (blue asbestos)**
- **Legend for Asbestos Type:**
- **'t' Trace levels**
- **'UMF' Unknown mineral fibres**
- **Asbestos conducted by ALS Newcastle, NATA accreditation no. 825, site no 1656.**
- **Asbestos Identification: Samples were analysed by Polarised Light Microscopy including dispersion staining.**
- **Confirmation by alternative techniques is recommended for samples where unknown mineral fibres are detected. Negative results for vinyl tiles should be confirmed by an independent analytical technique.**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/VS-6	4A/VS-7	----	----	----
				Client sampling date / time: 12-OCT-2010 15:00	13-OCT-2010 15:00	----	----	----
				EM1011259-001	**EM1011259-002**	**----**	**----**	**----**
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	**No**	**No**	----	----	----
Asbestos Type	132207-33-1	0.1	--	**-**	**-**	----	----	----
Sample weight (dry)	----	0.01	g	**364**	**161**	----	----	----
APPROVED IDENTIFIER:	----	-	--	**K.HALL**	**K.HALL**	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	4A/VS-6 - 12-OCT-2010 15:00	A mid orangey-brown very fine grain (but partly sandy) friable clay soil with minor vegetation debris.
EA200: Description	4A/VS-7 - 13-OCT-2010 15:00	A mid brown very fine grain (but partly sandy) friable clay soil with minor vegetation debris.

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM1011259**	Page	: 1 of 5
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Sarah Hodgson
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: sarah.hodgson@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: 03 8549 9652
Facsimile	: +61 03 9593 8555	Facsimile	: 03 8549 9626
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0264	Date Samples Received	: 14-OCT-2010
Sampler	: LD	Issue Date	: 22-OCT-2010
Order number	: 34636		
		No. of samples received	: 2
Quote number	: ME/281/09	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag 4A/VS-6	**12-OCT-2010**	**---**	10-APR-2011	----	**22-OCT-2010**	20-APR-2011	✓
Snap Lock Bag 4A/VS-7	**13-OCT-2010**	**---**	11-APR-2011	----	**22-OCT-2010**	20-APR-2011	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix:

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**
- **For all matrices, no Matrix Spike outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- **No Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

QUALITY CONTROL REPORT

Work Order	: **EM1011259**	Page	: 1 of 5
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Sarah Hodgson
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: sarah.hodgson@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: 03 8549 9652
Facsimile	: +61 03 9593 8555	Facsimile	: 03 8549 9626
Project	: 3106004 1000 INFRASTRUCTURE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0264	Date Samples Received	: 14-OCT-2010
Sampler	: LD	Issue Date	: 22-OCT-2010
Order number	: 34636		
		No. of samples received	: 2
Quote number	: ME/281/09	No. of samples analysed	: 2

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
KEN HALL	Analyst	Newcastle

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

		----						No Limit

- **No Laboratory Duplicate (DUP) Results are required to be reported.**

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

- **No Method Blank (MB) or Laboratory Control Spike (SCS) Results are required to be reported.**

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

- **No Matrix Spike (MS) Results are required to be reported.**

COC NUMBER: 0264

LAB ALS
ADDRESS 4 Westall Rd, Springvale
LAB CONTACT
PHONE 8549 9600

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
ldallago@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT # 31060041/1000
PROJECT NAME Infrastructure Removal
COLLECTORS NAME LUKE DALLAGO
LAB JOB #

PRELIM. RESULTS BY: email (☐ VERBAL ☐ FAX ☑ EMAIL)
FINAL REPORT BY: 1 week
LAB QUOTE REF: me/281/10
OTEK PO No.: 34636

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	BAGS / No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: Asbestos
DISCRETE SAMPLE REQUEST:										
4A/VS-6	0.6	1	S	X				12.10.10	1	X
4A/VS-7	0.7	2	S	X				13.10.10	1	X

REMARKS

Environmental Division
Melbourne
Work Order
EM1011259
Telephone : +61-3-8549 9600

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples.

Sampler Name: (Print) LUKE DALLAGO (Signature)

Date 14.10.10

Relinquished by:	Date	Time	Received by:	Date	Time
Luke Dallago	14.10.10	11.50			14.10.10
	14/10	1.30			
			KP AUS	14/10	1130

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

Additional Comments:

Please provide electronic results in ESDAT format

DATA VALIDATION REPORT

Project Name:	Werribee Sub-Area 4A - Well Installation	**Validation Conducted by:**	CEC
Project Number:	3106004	**Signed & Dated:**	24/03/2011
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	ALS	**Secondary Laboratory:**	LabMark	**Soil**
Batch Number:	EM0910684	**Batch Number:**	09ENME003875	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
5	1	1	2

Have the Following Criteria Been Met? (Shade)

				Explain any Discrepancies:
Blind Replicate	**OK if >5%**	20	**NOT OK if <5%**	
Split Sample	**OK if >5%**	20	**NOT OK if <5%**	
Blank Samples	**OK**	2	**NOT OK**	

1 Rinsate
Field
1 Trip

Refer to OTEK QA/QC results table

	Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	1	**Number obtained**	1	
	MW-8/QS-1	**Sample Identification**	MW-8/QS-1A	
A	26	**Total Number of Analytes**	24	**B**
	0	**No. of analytes with RPD >50% (Fail)**	0	
	26	**Number of analytes <50% (Pass)**	24	
	100.0	**% Pass**	100.0	

Explain any Discrepancies:

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	1		1
Sample Identifictaion	MW-8/TB-1		MW-8/RB-1
Number of Analytes	13		13
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	6	4
	No. Fails	0	0
Analysis	**No. Passes**	8	5
	No. Fails	0	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

DATA VALIDATION REPORT

Project Name: Werribee Sub-Area 4A - Well Installation

Validation Conducted by: CEC

Section 3: **Laboratory Data Quality - Refer to Certificate of Analysis**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	53	37
# samples RPD >50% **(FAIL)**	9	0
% Pass	83	100

Laboratory Duplicate RPDs

OK (>95%)	92
NOT OK (<95%)	

Explanation for Failures:

ALS exceedences of RPD>50% for an anonymous sampple for Phenanthrene (53.9%), Flouranthene (58.9), Benz(a)anthracene (94.1%), Chrysen (75%), Benzo(b)flouranthene)63.2%), Benzo(k)flouranthene (79.6), Benzo(a)pyrene (58.5%), Indeno(1.2.3.cd)perylene (57.6%), Benzo(g.h.i)perylene (53.0%)

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	27	37
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	27	0
# analytes outside range i.e <70% or >130% **(FAIL)**	2	0
% Pass	93	#DIV/0!

Surrogates

OK (>95%)	#####
NOT OK (<95%)	

Explanation for Failures:

One Analyte for the primary lab, Acenaphthylene exceeded Spike Recovery range (131%)

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	9	0
# Analytes outside range i.e <70% or >130%	0	0
% Pass	100	#DIV/0!

Internal Spikes

OK (>95%)	#####
NOT OK (<95%)	

Explanation for Failures:

FINAL DATA

	Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
A	Primary Duplicates	0	26	100.0
B	Secondary Duplicates	0	24	100.0
C	Trip Blanks	0	13	100.0
D	Field Blanks	0	0	-
E	Rinsate Blanks	0	13	100.0
F & G	Lab Internal Duplicates	9	90	90.0
H & I	Lab Method Blanks	0	64	100.0
J & K	Lab Internal Spike Recoveries	2	27	92.6
L & M	Laboratory Spike Recoveries	0	9	100.0
	Total	**11**	**266**	**95.9**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

OTEK AUSTRALIA
INSPECTION VERIFICATION RECORD
PASS ✓ FAIL
NAME (Print) CATHERINE CRILLY
SIGNATURE
28/10/11

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0910684**	Page	: 1 of 7
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Steven McGrath
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Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 WERRIBEE RIVERWALK AREA 4	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 0771		
C-O-C number	: 0101	Date Samples Received	: 27-OCT-2009
Sampler	: KB	Issue Date	: 05-NOV-2009
Site	: ----		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 8

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Xingbin Lin	Instrument Chemist	Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-8/2.0	MW-8/3.0	MW-8/5.0	MW-8/8.0	MW-8/QS-1
				Client sampling date / time: 26-OCT-2009 15:00	26-OCT-2009 15:00	26-OCT-2009 15:00	26-OCT-2009 15:00	26-OCT-2009 15:00
				EM0910684-002	EM0910684-003	EM0910684-005	EM0910684-008	EM0910684-009
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**8.0**	**13.6**	**12.4**	**22.9**	**13.2**
EG005T: Total Metals by ICP-AES								
Lead	7439-92-1	5	mg/kg	**11**	**11**	**12**	**8**	**12**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**112**	**94.5**	**97.5**	**92.6**	**119**
2-Chlorophenol-D4	93951-73-6	0.1	%	**97.1**	**81.7**	**107**	**102**	**102**
2.4.6-Tribromophenol	118-79-6	0.1	%	**68.0**	**61.0**	**92.4**	**80.4**	**79.6**
EP075(SIM)T: PAH Surrogates								

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-8/2.0	MW-8/3.0	MW-8/5.0	MW-8/8.0	MW-8/QS-1
				Client sampling date / time: 26-OCT-2009 15:00	26-OCT-2009 15:00	26-OCT-2009 15:00	26-OCT-2009 15:00	26-OCT-2009 15:00
				EM0910684-002	EM0910684-003	EM0910684-005	EM0910684-008	EM0910684-009
EP075(SIM)T: PAH Surrogates - Continued								
2-Fluorobiphenyl	321-60-8	0.1	%	**80.7**	**79.8**	**85.5**	**87.9**	**91.9**
Anthracene-d10	1719-06-8	0.1	%	**111**	**113**	**101**	**107**	**119**
4-Terphenyl-d14	1718-51-0	0.1	%	**114**	**108**	**129**	**132**	**125**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**100**	**91.6**	**107**	**85.4**	**106**
Toluene-D8	2037-26-5	0.1	%	**92.6**	**82.9**	**98.0**	**82.1**	**101**
4-Bromofluorobenzene	460-00-4	0.1	%	**98.8**	**88.0**	**105**	**84.5**	**105**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4B/VS-56	----	----	----	----
				Client sampling date / time: 26-OCT-2009 15:00	----	----	----	----
				EM0910684-012	----	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**32.7**	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**92.1**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**104**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**59.9**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**104**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	**103**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**142**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**102**	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	**97.0**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	**99.4**	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-8/TB-1	MW-8/RB-1	----	----	----
				Client sampling date / time: 26-OCT-2009 15:00	26-OCT-2009 15:00	----	----	----
				EM0910684-010	EM0910684-011	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	19	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	70	130
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	130

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0910684**	Page	: 1 of 8
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Steven McGrath
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Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 WERRIBEE RIVERWALK AREA 4	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0101	Date Samples Received	: 27-OCT-2009
Sampler	: KB	Issue Date	: 05-NOV-2009
Order number	: 0771		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 8

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
MW-8/2.0, MW-8/3.0, MW-8/5.0, MW-8/8.0, MW-8/QS-1, 4B/VS-56	**26-OCT-2009**	**----**	----	----	**30-OCT-2009**	02-NOV-2009	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved							
MW-8/2.0, MW-8/3.0, MW-8/5.0, MW-8/8.0, MW-8/QS-1	**26-OCT-2009**	**01-NOV-2009**	24-APR-2010	✓	**04-NOV-2009**	24-APR-2010	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
MW-8/2.0, MW-8/3.0, MW-8/5.0, MW-8/8.0, MW-8/QS-1, 4B/VS-56	**26-OCT-2009**	**04-NOV-2009**	09-NOV-2009	✓	**04-NOV-2009**	14-DEC-2009	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved							
MW-8/2.0, MW-8/3.0, MW-8/5.0, MW-8/8.0, MW-8/QS-1, 4B/VS-56	**26-OCT-2009**	**04-NOV-2009**	09-NOV-2009	✓	**04-NOV-2009**	14-DEC-2009	✓
Soil Glass Jar - Unpreserved							
MW-8/2.0, MW-8/3.0, MW-8/5.0, MW-8/8.0, MW-8/QS-1, 4B/VS-56	**26-OCT-2009**	**30-OCT-2009**	09-NOV-2009	✓	**02-NOV-2009**	09-NOV-2009	✓
EP080: BTEX							
Soil Glass Jar - Unpreserved							
MW-8/2.0, MW-8/3.0, MW-8/5.0, MW-8/8.0, MW-8/QS-1	**26-OCT-2009**	**30-OCT-2009**	09-NOV-2009	✓	**02-NOV-2009**	09-NOV-2009	✓

Matrix: **WATER** Evaluation: × = Holding time breach ; ✓ = Within holding time.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Unfiltered								
MW-8/TB-1,	MW-8/RB-1	**26-OCT-2009**	**29-OCT-2009**	24-APR-2010	✓	**29-OCT-2009**	24-APR-2010	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Unfiltered								
MW-8/TB-1,	MW-8/RB-1	**26-OCT-2009**	**----**	----	----	**30-OCT-2009**	23-NOV-2009	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	15	13.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	3	29	10.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	12	16.7	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	19	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	29	6.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	12	8.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	29	6.9	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	12	8.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.7	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	29	6.9	5.0	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	12	8.3	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	19	5.3	5.0	✓	ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	1	7	14.3	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	6	16.7	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	7	14.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	6	16.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	7	14.3	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	6	16.7	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	7	14.3	5.0	✓	ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Total Metals by ICP-MS - Suite A	EG020A-T	1	6	**16.7**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	1324546-005	----	**Acenaphthylene**	208-96-8	131 %	75-121%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	1324546-005	----	**Benzo(g.h.i)perylene**	191-24-2	125 %	69-119%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EM0910638-006	Anonymous	**Lead**	7439-92-1	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG020T: Total Metals by ICP-MS	EM0910648-001	Anonymous	**Chromium**	7440-47-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	EM0910684-009	MW-8/QS-1	**Phenol-d6**	13127-88-3	119 %	24-113 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EM0910684-012	4B/VS-56	**4-Terphenyl-d14**	1718-51-0	142 %	18-137 %	**Recovery greater than upper data quality objective**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- **No Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

QUALITY CONTROL REPORT

Work Order	: **EM0910684**	Page	: 1 of 9
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 WERRIBEE RIVERWALK AREA 4	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0101	Date Samples Received	: 27-OCT-2009
Sampler	: KB	Issue Date	: 05-NOV-2009
Order number	: 0771		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 8

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Xingbin Lin	Instrument Chemist	Organics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 1147905)									
EM0910684-002	MW-8/2.0	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	8.0	8.0	0.0	No Limit
EM0910708-003	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	<1.0	<1.0	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1148431)									
EM0910638-005	Anonymous	EG005T: Lead	7439-92-1	5	mg/kg	8	9	0.0	No Limit
EM0910638-023	Anonymous	EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 1148434)									
EM0910684-008	MW-8/8.0	EG005T: Lead	7439-92-1	5	mg/kg	8	8	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1148550)									
EM0910637-030	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	0.8	1.4	53.9	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	0.6	21.1	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	2.1	3.8	58.9	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	2.4	3.8	44.3	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	1.1	3.1	94.1	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	1.0	2.3	75.1	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	2.0	3.8	63.2	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.2	79.2	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	1.5	2.7	58.5	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	0.9	1.6	57.6	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	0.6	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	1.3	2.2	53.0	No Limit
EM0910637-044	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1148550) - continued									
EM0910637-044	Anonymous	EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1147898)									
EM0910660-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM0910743-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1148549)									
EM0910637-030	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	110	11.9	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	130	23.2	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM0910637-044	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEX (QC Lot: 1147898)									
EM0910660-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM0910743-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 1146321)									
EM0910648-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.008	0.007	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.023	0.023	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	59.2	58.6	1.1	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.013	0.013	0.0	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.048	0.048	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 1146321) - continued									
EM0910648-001	Anonymous	EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.210	0.217	3.4	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.030	0.030	0.0	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.079	0.078	1.6	0% - 50%
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	0.01	0.01	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1147775)									
EM0910684-010	MW-8/TB-1	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1148431)								
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	92.0	85.4	115
EG005T: Total Metals by ICP-AES (QCLot: 1148434)								
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	92.0	85.4	115
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1148550)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	10 mg/kg	102	77	117
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	10 mg/kg	# 131	75	121
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	10 mg/kg	97.7	79	117
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	10 mg/kg	98.3	73	125
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	10 mg/kg	94.9	77	115
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	10 mg/kg	85.5	79	117
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	10 mg/kg	102	79	115
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	10 mg/kg	100	79	115
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	10 mg/kg	101	76	116
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	10 mg/kg	102	78	116
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	10 mg/kg	103	70	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	10 mg/kg	98.2	69	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	10 mg/kg	97.4	72	118
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	10 mg/kg	118	71	119
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	10 mg/kg	119	71	119
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	10 mg/kg	# 125	69	119
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1147898)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	32 mg/kg	89.4	81	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1148549)								
EP071: C10 - C14 Fraction	----	50	mg/kg	---- <50	606 mg/kg ----	93.2 ----	69 ----	123 ----
EP071: C15 - C28 Fraction	----	100	mg/kg	---- <100	1460 mg/kg ----	95.2 ----	69 ----	127 ----
EP071: C29 - C36 Fraction	----	100	mg/kg	<100 ----	---- 342 mg/kg	---- 94.8	---- 70	---- 130
EP080: BTEX (QCLot: 1147898)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	83.7	80	122
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	88.0	80	122
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	85.6	79	121

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEX (QCLot: 1147898) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	91.5	79	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	87.0	79	121

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 1146321)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	85	111
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	81.8	74	122
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	108	82	122
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	105	90	114
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	100	86	114
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	108	83	117
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	103	88	116
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.9	92	114
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	88	112
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	103	86	116
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	104	85	117
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	81	119
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1147775)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	93.6	76	126

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 1148431)							
EM0910638-006	Anonymous	EG005T: Lead	7439-92-1	50 mg/kg	# Not Determined	70	130
EG005T: Total Metals by ICP-AES (QCLot: 1148434)							
EM0910684-009	MW-8/QS-1	EG005T: Lead	7439-92-1	50 mg/kg	85.6	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1148550)							
EM0910637-033	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	105	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	79.3	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1147898)							
EM0910757-001	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	129	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1148549)							
EM0910637-031	Anonymous	EP071: C10 - C14 Fraction	----	606 mg/kg	106	60	130
		EP071: C15 - C28 Fraction	----	1460 mg/kg	123	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	122	60	130
EP080: BTEX (QCLot: 1147898)							
EM0910757-001	Anonymous	EP080: Benzene	71-43-2	2 mg/kg	108	----	----
		EP080: Toluene	108-88-3	2 mg/kg	111	----	----

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 1146321)							
EM0910648-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	114	70	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	86.8	70	130
		EG020A-T: Barium	7440-39-3	1 mg/L	116	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	111	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	# Not Determined	70	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	110	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	108	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	98.4	70	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	93.6	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	108	70	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	100	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	109	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 1147775)							
EM0910684-011	MW-8/RB-1	EG035T: Mercury	7439-97-6	0.0100 mg/L	94.6	70	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order : **EM0910684**

Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 WERRIBEE RIVERWALK AREA 4	Page	: 1 of 3
Order number	: 0771		
C-O-C number	: 0101	Quote number	: EM2009OTEK0282 (ME/281/09)
Site	: ----		
Sampler	: KB	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 27-OCT-2009	Issue Date	: 28-OCT-2009 17:05
Client Requested Due Date	: 05-NOV-2009	Scheduled Reporting Date	: **05-NOV-2009**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 15 - 16 - Ice present
No. of coolers/boxes	: 1	No. of samples received	: 12
Sercurity Seal	: Intact.	No. of samples analysed	: 12

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - S-06 TPH/BTEX/Pb	SOIL - TPH only TPH (C6 - C36)
EM0910684-001	26-OCT-2009 15:00	MW-8/1.0	✓	✓	
EM0910684-002	26-OCT-2009 15:00	MW-8/2.0	✓	✓	
EM0910684-003	26-OCT-2009 15:00	MW-8/3.0	✓	✓	
EM0910684-004	26-OCT-2009 15:00	MW-8/4.0	✓	✓	
EM0910684-005	26-OCT-2009 15:00	MW-8/5.0	✓	✓	
EM0910684-006	26-OCT-2009 15:00	MW-8/6.0	✓	✓	
EM0910684-007	26-OCT-2009 15:00	MW-8/7.0	✓	✓	
EM0910684-008	26-OCT-2009 15:00	MW-8/8.0	✓	✓	
EM0910684-009	26-OCT-2009 15:00	MW-8/QS-1	✓	✓	
EM0910684-012	26-OCT-2009 15:00	4B/VS-56	✓		✓

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EG020A-T Total Metals by ICPMS - Suite A
EM0910684-010	26-OCT-2009 15:00	MW-8/TB-1	✓
EM0910684-011	26-OCT-2009 15:00	MW-8/RB-1	✓

Requested Deliverables

MR GURDEEP KHOSA

- *AU Certificate of Analysis - NATA (COA)	Email	gkhosa@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gkhosa@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gkhosa@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	gkhosa@otek.com.au
- Default - Chain of Custody (COC)	Email	gkhosa@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	gkhosa@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	gkhosa@otek.com.au

MR KAYNE BEGBIE

- *AU Certificate of Analysis - NATA (COA)	Email	kbegbie@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	kbegbie@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	kbegbie@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	kbegbie@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	kbegbie@otek.com.au
- Default - Chain of Custody (COC)	Email	kbegbie@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	kbegbie@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	kbegbie@otek.com.au

MR LUKE DAL LAGO

- *AU Certificate of Analysis - NATA (COA)	Email	ldallago@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ldallago@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ldallago@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	ldallago@otek.com.au
- Default - Chain of Custody (COC)	Email	ldallago@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	ldallago@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	ldallago@otek.com.au

MR TOM SANTWYK-ANDERSON

- *AU Certificate of Analysis - NATA (COA)	Email	tsantwyk-anderson@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	tsantwyk-anderson@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	tsantwyk-anderson@otek.com.au
- Default - Chain of Custody (COC)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	tsantwyk-anderson@otek.com.au

MS EMILY BURKE

- *AU Certificate of Analysis - NATA (COA)	Email	eburke@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	eburke@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	eburke@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	eburke@otek.com.au
- Default - Chain of Custody (COC)	Email	eburke@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	eburke@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	eburke@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA (COA)	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	vicreception@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	vicreception@otek.com.au
- Default - Chain of Custody (COC)	Email	vicreception@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	vicreception@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	vicreception@otek.com.au

COC NUMBER: 0101

LAB ALS
ADDRESS 4 Westall Rd Springvale
LAB CONTACT
PHONE

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
kbeghie@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT # 31060C4/1001
PROJECT NAME 4B Remediation
COLLECTORS NAME Kayne
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL
FINAL REPORT BY: 1 week turnaround
LAB QUOTE REF: ME/281/09
OTEK PO No.: 0771

	SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	TPH	PAH	BTEX	Lead (Pb)	REMARKS
	DISCRETE SAMPLE REQUEST:														
1	MW-8 / 1.0	1		S	✓				26/10/09	1	X	X	X	X	see attached email DW 29/10/09
2	/ 2.0	2		S	✓					1	X	X	X	X	
3	/ 3.0	3		S	✓					1	X	X	X	X	
4	/ 4.0	4		S	✓					1	X	X	X	X	
5	/ 5.0	5		S	✓					1	X	X	X	X	
6	/ 6.0	6		S	✓					1	X	X	X	X	
7	/ 7.0	7		S	✓					1	X	X	X	X	
8	/ 8.0	8		S	✓					1	X	X	X	X	
9	MW-8/QS-1	-		S	✓					1	X	X	X	X	see attached email DW 29/10/09
10	MW-8/TB-1	-		W	✓	✓				1	X	X	X	X	
11	MW-8/RB-1	-		W	✓	✓				1	X	X	X	X	
12	4B/VS-56	0.001		S	✓					1	X	X			

Environmental Divisi
Melbourne
Work Order
EM0910684

Telephone +61 3-8549 9600

SCANNED

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Kayne Beghie (Signature)

Date 27/10/09

Relinquished by:	Date	Time	Received by:	Date	Time
	27/10/2009	2.45pm	446	27/10/09	2:45pm
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by: 446	Date 27/10/09	Time 4:00pm	Received by: Sandy	Date 27/10	Time 4pm

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

Additional Comments:

Please provide electronic results in ESDAT format

Danielle White

From: Kayne Begbie [kbegbie@otek.com.au]
Sent: Thursday, 29 October 2009 9:07 AM
To: Danielle White
Cc: 'Tom Santwyk Anderson'
Subject: FW: 3106004 WERRIBEE RIVERWALK AREA 4/EM0910684
Attachments: EM0910684__COC.pdf; ATT28879.txt

Danielle,

Could I please make an urgent amendment to a mistake I have made on the attached COC,

Please proceed to analyse samples:

MW-8/2.0
MW-8/3.0
MW-8/5.0
MW-8/8.0

for TPH/BTEX/PAH/Lead

Samples:

MW-8/1.0
MW-8/4.0
MW-8/6.0
MW-8/7.0

are to remain on hold

Sorry for the confusion,

Kayne

Kayne Begbie - Project Manager

OTEK_logo_2008hi

T: 03 9095 1925 (Direct) **T:** 03 9525 5155 (Switch) **F:** 03 9593 8555

M: 0401 863 379 **E:** kbegbie@otek.com.au **W:** www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

From: Danielle White [mailto:Danielle.White@alsenviro.com]
Sent: Wednesday, 28 October 2009 5:02 PM

To: kbegbie@otek.com.au
Cc: Tom Santwyk Anderson; eburke@otek.com.au; ldallago@otek.com.au; gkhosa@otek.com.au
Subject: 3106004 WERRIBEE RIVERWALK AREA 4/EM0910684

Hi Kayne,

For the attached COC Samples MW-8/TB-1 (#9) and MW-8/RB-1 (#11) where you have requested TPH/BTEX/PAH/Lead you have only supplied a unfiltered nitric preserved bottle therefore we will only be able to perform the Lead analysis on these samples.

Regards

Danielle White
Committal Officer
ALS Laboratory Group
Environmental Division
Melbourne, Australia
☎ Phone: + 61 3 8549 9600
Fax: + 61 3 8549 9601
www.alsglobal.com

Danielle White

From: Kayne Begbie [kbegbie@otek.com.au]
Sent: Thursday, 29 October 2009 8:41 AM
To: Danielle White
Cc: 'Tom Santwyk Anderson'; eburke@otek.com.au; ldallago@otek.com.au; gkhosa@otek.com.au
Subject: RE: 3106004 WERRIBEE RIVERWALK AREA 4/EM0910684

Hi Danielle,

In that case please include the M13 metals suite for analysis of samples MW-8/TB-1 (#9) and MW-8/RB-1 (#11)

Thanks! Kayne

Kayne Begbie - Project Manager

OTEK_logo_2008hi

T: 03 9095 1925 (Direct) **T:** 03 9525 5155 (Switch) **F:** 03 9593 8555

M: 0401 863 379 **E:** kbegbie@otek.com.au **W:** www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

From: Danielle White [mailto:Danielle.White@alsenviro.com]
Sent: Wednesday, 28 October 2009 5:02 PM
To: kbegbie@otek.com.au
Cc: Tom Santwyk Anderson; eburke@otek.com.au; ldallago@otek.com.au; gkhosa@otek.com.au
Subject: 3106004 WERRIBEE RIVERWALK AREA 4/EM0910684

Hi Kayne,

For the attached COC Samples MW-8/TB-1 (#9) and MW-8/RB-1 (#11) where you have requested TPH/BTEX/PAH/Lead you have only supplied a unfiltered nitric preserved bottle therefore we will only be able to perform the Lead analysis on these samples.

Regards

Danielle White
Committal Officer
ALS Laboratory Group
Environmental Division
Melbourne, Australia
☎ Phone: + 61 3 8549 9600

Fax: + 61 3 8549 9601
www.alsglobal.com

PLEASE CONSIDER THE ENVIRONMENT BEFORE PRINTING THIS E-MAIL!

DATA VALIDATION REPORT

Project Name:	Werribee Hydrogeological Assessment	**Validation Conducted by:**	RMF
Project Number:	3106004	**Signed & Dated:**	17/02/2010
Address:	New Farm Road Werribee		

Primary Laboratory:	ALS	**Secondary Laboratory:**	Labmark	**Sample Matrix:** (Shade)
Batch Number:	EM0912070	**Batch Number:**	09ENME0044068	**Soil**
				Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
8	1	1	3

Have the Following Criteria Been Met? (Shade)

Explain any Discrepancies:

Blind Replicate	**OK if >5%** 12.5	**NOT OK if <5%**	
Split Sample	**OK if >5%** 12.5	**NOT OK if <5%**	
Blank Samples	**OK** 3	**NOT OK**	

2	Rinsate
0	Field
1	Trip

Refer to OTEK QA/QC results table

	Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	1	**Number obtained**	**1**	
	A4/QS-1	**Sample Identification**	A4/QS-1A	
A	133	**Total Number of Analytes**	119	**B**
	0	**No. of analytes with RPD >50% (Fail)**	4	
	133	**Number of analytes <50% (Pass)**	115	
	100.0	**% Pass**	96.6	

Explain any Discrepancies:

A4/QS-1A - 4 exceedences for Arsenic, Total Chromium, Selenium and Nitrate as N, with RPD's of >100%, >186%, >123% and 101% respectively.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	1		2
Sample Identifictaion	A4/TB-2		A4/RB-2, A4/RB-3
Number of Analytes	18		36
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	12	13
	No. Fails	0	0
Analysis	**No. Passes**	55	13
	No. Fails	3	0

Explain any Discrepancies:

A4/MW-1 - 8 breached ALS holding times by 4-6 days for pH analysis.

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

DATA VALIDATION REPORT

Project Name: Werribee Hydrogeological Assessment

Validation Conducted by: RMF

Section 3: **Laboratory Data Quality - Refer to Quality Control Report**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	193	0
# samples RPD >50% **(FAIL)**	2	0
% Pass	99	-

Laboratory Duplicate RPDs

OK (>95%)	99
NOT OK (<95%)	

Explanation for Failures:

No data provided from Labmark.

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	188	138
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	190	86
# analytes outside range i.e <70% or >130% **(FAIL)**	9	5
% Pass	95	94

Surrogates

OK (>95%)	95
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	37	0
# Analytes outside range i.e <70% or >130%	1	0
% Pass	97	-

Internal Spikes

OK (>95%)	97
NOT OK (<95%)	

Explanation for Failures:

No data provided from Labmark.

FINAL DATA

	Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
A	Primary Duplicates	0	133	100.0
B	Secondary Duplicates	4	119	96.6
C	Trip Blanks	0	18	100.0
D	Field Blanks	0	0	-
E	Rinsate Blanks	0	36	100.0
F & G	Lab Internal Duplicates	2	193	99.0
H & I	Lab Method Blanks	0	326	100.0
J & K	Lab Internal Spike Recoveries	14	276	95.0
L & M	Laboratory Spike Recoveries	1	37	97.3
	Total	**21**	**1138**	**98.2**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) ROD FOUNTAIN
SIGNATURE
DATE 12/2/10

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0912070**	Page	: 1 of 14
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 AREA 4 GME	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 0779		
C-O-C number	: 0104	Date Samples Received	: 27-NOV-2009
Sampler	: KB	Issue Date	: 08-DEC-2009
Site	: ----		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 12

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Nancy Wang	Instrument Chemist	Organics
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **Ionic Balance out of acceptable limits for EM012070 #6 due to analytes not quantified in this report.**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
				Client sampling date / time: 25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EA005: pH								
pH Value	----	0.01	pH Unit	**7.40**	**7.50**	**7.40**	**7.20**	**7.45**
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	**7750**	**7820**	**7980**	**6450**	**8020**
EA015: Total Dissolved Solids								
^ Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	**4660**	**4900**	**4980**	**3920**	**5000**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**360**	**356**	**337**	**352**	**420**
Total Alkalinity as CaCO3	----	1	mg/L	**360**	**356**	**337**	**352**	**420**
ED040F: Dissolved Major Anions								
Sulfate as SO4 2-	14808-79-8	1	mg/L	**354**	**363**	**323**	**288**	**358**
ED045P: Chloride by PC Titrator								
Chloride	16887-00-6	1	mg/L	**2100**	**2100**	**2410**	**1700**	**2370**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**180**	**181**	**262**	**174**	**180**
Magnesium	7439-95-4	1	mg/L	**177**	**181**	**328**	**166**	**336**
Sodium	7440-23-5	1	mg/L	**1010**	**1030**	**841**	**776**	**888**
Potassium	7440-09-7	1	mg/L	**24**	**25**	**14**	**8**	**16**
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	**0.001**	**0.001**	**0.001**	<0.001	**0.001**
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	**0.339**	**0.371**	**0.098**	**0.074**	**0.160**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	**0.003**	<0.001	**0.001**
Cobalt	7440-48-4	0.001	mg/L	**0.006**	**0.005**	<0.001	**0.005**	<0.001
Copper	7440-50-8	0.001	mg/L	**0.004**	**0.004**	**0.005**	**0.001**	**0.004**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	**0.743**	**0.742**	**0.001**	**0.861**	**0.002**
Molybdenum	7439-98-7	0.001	mg/L	**0.006**	**0.006**	<0.001	**0.001**	<0.001
Nickel	7440-02-0	0.001	mg/L	**0.027**	**0.028**	**0.011**	**0.013**	**0.007**
Selenium	7782-49-2	0.01	mg/L	<0.01	**0.01**	**0.01**	<0.01	<0.01
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	**0.009**	**0.010**	**0.014**	**0.014**	**0.013**
Boron	7440-42-8	0.05	mg/L	**0.43**	**0.43**	**0.14**	**0.12**	**0.32**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
				Client sampling date / time: 25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	----	0.01	mg/L	**0.08**	**0.08**	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
^ Nitrate as N	14797-55-8	0.01	mg/L	**1.31**	**1.28**	**4.01**	**3.72**	**5.19**
EK059G: NOX as N by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**1.40**	**1.37**	**4.01**	**3.72**	**5.19**
EN055: Ionic Balance								
^ Total Anions	----	0.01	meq/L	**73.8**	**73.9**	**81.5**	**61.0**	**82.8**
^ Total Cations	----	0.01	meq/L	**68.3**	**69.2**	**77.0**	**56.3**	**75.7**
^ Ionic Balance	----	0.01	%	**3.87**	**3.27**	**2.80**	**4.04**	**4.50**
EP071/080: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	**300**	**260**	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	5	µg/L	<5	<5	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	<5	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	<5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	----	----	----
1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	<5	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	<50	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	<5	----	----	----
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	----	----	----
1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
				Client sampling date / time: 25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EP074D: Fumigants - Continued								
trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	<50	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	<50	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	<50	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	<50	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	----	----	----
1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	<5	----	----	----
trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	----	----	----
1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	----	----	----
cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	----	----	----
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	<5	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	<5	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	<5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	<5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	<5	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	<5	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
Client sampling date / time				25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EP074F: Halogenated Aromatic Compounds - Continued								
1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	<5	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	<5	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	<5	----	----	----
Bromoform	75-25-2	5	µg/L	<5	<5	----	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	----	----	----
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	----	----	----
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	----	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	----	----	----
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	----	----	----
2.4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	----	----	----
2.4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	----	----	----
2.6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	----	----	----
4-Chloro-3-Methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	----	----	----
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	----	----	----
2.4.5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	----	----	----
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A1/MW-8	A1/QS-1	A4/MW-3	A4/MW-4	A4/MW-1
				Client sampling date / time: 25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	25-NOV-2009 15:00	26-NOV-2009 15:00
				EM0912070-001	EM0912070-002	EM0912070-003	EM0912070-004	EM0912070-005
EP080/071: Total Petroleum Hydrocarbons								
^ C10 - C36 Fraction (sum)	----	50	µg/L	**300**	**260**	<50	<50	<50
EP080: BTEX								
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**106**	**111**	----	----	----
Toluene-D8	2037-26-5	0.1	%	**106**	**106**	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	**102**	**107**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**38.7**	**33.9**	**31.8**	**23.0**	**36.2**
2-Chlorophenol-D4	93951-73-6	0.1	%	**101**	**89.6**	**79.3**	**71.9**	**99.8**
2.4.6-Tribromophenol	118-79-6	0.1	%	**99.8**	**102**	**81.8**	**80.2**	**112**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**110**	**90.6**	**86.2**	**78.4**	**105**
Anthracene-d10	1719-06-8	0.1	%	**110**	**95.1**	**91.0**	**79.7**	**104**
4-Terphenyl-d14	1718-51-0	0.1	%	**115**	**97.3**	**88.5**	**76.9**	**101**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**106**	**108**	**101**	**97.3**	**97.7**
Toluene-D8	2037-26-5	0.1	%	**106**	**104**	**102**	**89.0**	**90.4**
4-Bromofluorobenzene	460-00-4	0.1	%	**102**	**93.7**	**85.5**	**82.3**	**77.7**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/MW-2	A4/MW-7	A4/RB-2	A4/MW-5	A4/MW-6
				Client sampling date / time: 26-NOV-2009 15:00	26-NOV-2009 15:00	26-NOV-2009 15:00	27-NOV-2009 15:00	27-NOV-2009 15:00
				EM0912070-006	EM0912070-007	EM0912070-008	EM0912070-009	EM0912070-010
EA005: pH								
pH Value	----	0.01	pH Unit	**7.39**	**7.24**	----	**7.32**	**7.23**
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	**9330**	**11200**	----	**8120**	**9980**
EA015: Total Dissolved Solids								
^ Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	**5120**	**6910**	----	**4910**	**6150**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**366**	**438**	----	**238**	**400**
Total Alkalinity as CaCO3	----	1	mg/L	**366**	**438**	----	**238**	**400**
ED040F: Dissolved Major Anions								
Sulfate as SO4 2-	14808-79-8	1	mg/L	**396**	**458**	----	**211**	**473**
ED045P: Chloride by PC Titrator								
Chloride	16887-00-6	1	mg/L	**2900**	**2980**	----	**2400**	**3260**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**231**	**299**	----	**194**	**248**
Magnesium	7439-95-4	1	mg/L	**401**	**431**	----	**278**	**456**
Sodium	7440-23-5	1	mg/L	**994**	**1210**	----	**890**	**1210**
Potassium	7440-09-7	1	mg/L	**18**	**26**	----	**20**	**18**
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.003**	<0.001	<0.001	**0.001**
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	**0.094**	**0.080**	<0.001	**0.087**	**0.213**
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	**0.002**	<0.001
Cobalt	7440-48-4	0.001	mg/L	<0.001	**0.002**	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	**0.010**	**0.003**	<0.001	**0.012**	**0.014**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	<0.001	**0.009**	<0.001	**0.001**	**0.003**
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	**0.019**	**0.031**	<0.001	**0.020**	**0.019**
Selenium	7782-49-2	0.01	mg/L	<0.01	**0.01**	<0.01	<0.01	**0.01**
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	**0.041**	**0.018**	<0.005	**0.031**	**0.031**
Boron	7440-42-8	0.05	mg/L	**0.22**	**0.26**	<0.05	**0.32**	**0.30**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/MW-2	A4/MW-7	A4/RB-2	A4/MW-5	A4/MW-6
Client sampling date / time				26-NOV-2009 15:00	26-NOV-2009 15:00	26-NOV-2009 15:00	27-NOV-2009 15:00	27-NOV-2009 15:00
				EM0912070-006	EM0912070-007	EM0912070-008	EM0912070-009	EM0912070-010
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	----	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
^ Nitrate as N	14797-55-8	0.01	mg/L	**3.87**	**2.69**	----	**1.28**	**3.14**
EK059G: NOX as N by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**3.87**	**2.69**	----	**1.28**	**3.14**
EN055: Ionic Balance								
^ Total Anions	----	0.01	meq/L	**97.5**	**102**	----	**76.9**	**110**
^ Total Cations	----	0.01	meq/L	**88.2**	**104**	----	**71.8**	**103**
^ Ionic Balance	----	0.01	%	**5.02**	**0.69**	----	**3.44**	**3.30**
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	----	----	----	----	<0.5
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	----	----	----	----	<0.5
beta-BHC	319-85-7	0.5	µg/L	----	----	----	----	<0.5
gamma-BHC	58-89-9	0.5	µg/L	----	----	----	----	<0.5
delta-BHC	319-86-8	0.5	µg/L	----	----	----	----	<0.5
Heptachlor	76-44-8	0.5	µg/L	----	----	----	----	<0.5
Aldrin	309-00-2	0.5	µg/L	----	----	----	----	<0.5
Heptachlor epoxide	1024-57-3	0.5	µg/L	----	----	----	----	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L	----	----	----	----	<0.5
alpha-Endosulfan	959-98-8	0.5	µg/L	----	----	----	----	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L	----	----	----	----	<0.5
Dieldrin	60-57-1	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDE	72-55-9	0.5	µg/L	----	----	----	----	<0.5
Endrin	72-20-8	0.5	µg/L	----	----	----	----	<0.5
beta-Endosulfan	33213-65-9	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDD	72-54-8	0.5	µg/L	----	----	----	----	<0.5
Endrin aldehyde	7421-93-4	0.5	µg/L	----	----	----	----	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L	----	----	----	----	<0.5
4.4`-DDT	50-29-3	2	µg/L	----	----	----	----	<2
Endrin ketone	53494-70-5	0.5	µg/L	----	----	----	----	<0.5
Methoxychlor	72-43-5	2	µg/L	----	----	----	----	<2
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.5	µg/L	----	----	----	----	<0.5
Demeton-S-methyl	919-86-8	0.5	µg/L	----	----	----	----	<0.5
Monocrotophos	6923-22-4	2	µg/L	----	----	----	----	<2

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/MW-2 Client sampling date / time: 26-NOV-2009 15:00 EM0912070-006	A4/MW-7 26-NOV-2009 15:00 EM0912070-007	A4/RB-2 26-NOV-2009 15:00 EM0912070-008	A4/MW-5 27-NOV-2009 15:00 EM0912070-009	A4/MW-6 27-NOV-2009 15:00 EM0912070-010
EP068B: Organophosphorus Pesticides (OP) - Continued								
Dimethoate	60-51-5	0.5	µg/L	----	----	----	----	<0.5
Diazinon	333-41-5	0.5	µg/L	----	----	----	----	<0.5
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	----	----	----	----	<0.5
Parathion-methyl	298-00-0	2	µg/L	----	----	----	----	<2
Malathion	121-75-5	0.5	µg/L	----	----	----	----	<0.5
Fenthion	55-38-9	0.5	µg/L	----	----	----	----	<0.5
Chlorpyrifos	2921-88-2	0.5	µg/L	----	----	----	----	<0.5
Parathion	56-38-2	2	µg/L	----	----	----	----	<2
Pirimphos-ethyl	23505-41-1	0.5	µg/L	----	----	----	----	<0.5
Chlorfenvinphos	470-90-6	0.5	µg/L	----	----	----	----	<0.5
Bromophos-ethyl	4824-78-6	0.5	µg/L	----	----	----	----	<0.5
Fenamiphos	22224-92-6	0.5	µg/L	----	----	----	----	<0.5
Prothiofos	34643-46-4	0.5	µg/L	----	----	----	----	<0.5
Ethion	563-12-2	0.5	µg/L	----	----	----	----	<0.5
Carbophenothion	786-19-6	0.5	µg/L	----	----	----	----	<0.5
Azinphos Methyl	----	0.5	µg/L	----	----	----	----	<0.5
EP071/080: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	<50
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	----	<1.0	<1.0

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/MW-2	A4/MW-7	A4/RB-2	A4/MW-5	A4/MW-6
				Client sampling date / time: 26-NOV-2009 15:00	26-NOV-2009 15:00	26-NOV-2009 15:00	27-NOV-2009 15:00	27-NOV-2009 15:00
				EM0912070-006	EM0912070-007	EM0912070-008	EM0912070-009	EM0912070-010
EP080/071: Total Petroleum Hydrocarbons								
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	<50
EP080: BTEX								
Benzene	71-43-2	1	µg/L	<1	<1	----	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	----	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	<2	<2
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	----	----	----	**96.1**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	----	----	----	**95.9**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**34.2**	**33.0**	----	**30.0**	**33.7**
2-Chlorophenol-D4	93951-73-6	0.1	%	**91.8**	**91.1**	----	**84.3**	**94.6**
2.4.6-Tribromophenol	118-79-6	0.1	%	**100**	**97.7**	----	**66.0**	**108**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**108**	**93.3**	----	**89.4**	**101**
Anthracene-d10	1719-06-8	0.1	%	**102**	**93.6**	----	**88.8**	**103**
4-Terphenyl-d14	1718-51-0	0.1	%	**99.6**	**91.9**	----	**86.9**	**102**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**109**	**95.5**	----	**113**	**109**
Toluene-D8	2037-26-5	0.1	%	**103**	**91.5**	----	**93.5**	**85.2**
4-Bromofluorobenzene	460-00-4	0.1	%	**91.8**	**80.8**	----	**86.6**	**101**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: A4/RB-3	A4/TB-2	----	----	----
				Client sampling date / time: 27-NOV-2009 15:00	27-NOV-2009 15:00	----	----	----
				EM0912070-011	EM0912070-012	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	130
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	53	140
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	86	115
Toluene-D8	2037-26-5	80	120
4-Bromofluorobenzene	460-00-4	88	110
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	94
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	10	123
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	43	116
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	33	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	86	115
Toluene-D8	2037-26-5	80	120
4-Bromofluorobenzene	460-00-4	88	110

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0912070**	Page	: 1 of 12
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 AREA 4 GME	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0104	Date Samples Received	: 27-NOV-2009
Sampler	: KB	Issue Date	: 08-DEC-2009
Order number	: 0779		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 12

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **WATER**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005: pH							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**----**	----	----	**01-DEC-2009**	25-NOV-2009	✗
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**----**	----	----	**01-DEC-2009**	26-NOV-2009	✗
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**----**	----	----	**01-DEC-2009**	27-NOV-2009	✗
EA010: Conductivity							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**----**	----	----	**01-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**----**	----	----	**01-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**----**	----	----	**01-DEC-2009**	25-DEC-2009	✓
EA015: Total Dissolved Solids							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**----**	----	----	**01-DEC-2009**	02-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**----**	----	----	**01-DEC-2009**	03-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**----**	----	----	**01-DEC-2009**	04-DEC-2009	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**03-DEC-2009**	09-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**03-DEC-2009**	10-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**03-DEC-2009**	11-DEC-2009	✓
ED040F: Dissolved Major Anions							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**01-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**01-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**01-DEC-2009**	25-DEC-2009	✓
ED045P: Chloride by PC Titrator							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**03-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**03-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**03-DEC-2009**	25-DEC-2009	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**01-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**01-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**01-DEC-2009**	25-DEC-2009	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**02-DEC-2009**	24-MAY-2010	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
A4/MW-1, A4/MW-2, A4/MW-7, A4/RB-2	**26-NOV-2009**	---	---	----	**02-DEC-2009**	25-MAY-2010	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
A4/MW-5, A4/MW-6, A4/RB-3, A4/TB-2	**27-NOV-2009**	---	---	----	**02-DEC-2009**	26-MAY-2010	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**03-DEC-2009**	23-DEC-2009	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
A4/MW-1, A4/MW-2, A4/MW-7, A4/RB-2	**26-NOV-2009**	---	---	----	**03-DEC-2009**	24-DEC-2009	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
A4/MW-5, A4/MW-6, A4/RB-3, A4/TB-2	**27-NOV-2009**	---	---	----	**03-DEC-2009**	25-DEC-2009	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**27-NOV-2009**	27-NOV-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**27-NOV-2009**	28-NOV-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**27-NOV-2009**	29-NOV-2009	✓
EK059G: NOX as N by Discrete Analyser							
Clear Plastic Bottle - Natural							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	---	---	----	**27-NOV-2009**	27-NOV-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	---	---	----	**27-NOV-2009**	28-NOV-2009	✓
Clear Plastic Bottle - Natural							
A4/MW-5, A4/MW-6	**27-NOV-2009**	---	---	----	**27-NOV-2009**	29-NOV-2009	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved							
A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved							
A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
EP071/080: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**01-DEC-2009**	02-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**01-DEC-2009**	03-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1, A4/MW-3, A4/MW-4	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
Amber VOC Vial- NaHSO4 or H2SO4							
A4/MW-1, A4/MW-2, A4/MW-7	**26-NOV-2009**	**---**	---	----	**07-DEC-2009**	10-DEC-2009	✓
Amber VOC Vial- NaHSO4 or H2SO4							
A4/MW-5, A4/MW-6	**27-NOV-2009**	**---**	---	----	**07-DEC-2009**	11-DEC-2009	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074B: Oxygenated Compounds							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074C: Sulfonated Compounds							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074D: Fumigants							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074E: Halogenated Aliphatic Compounds							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074F: Halogenated Aromatic Compounds							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
EP074G: Trihalomethanes							
Amber VOC Vial- NaHSO4 or H2SO4							
A1/MW-8, A1/QS-1	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved								
A1/MW-8,	A1/QS-1	**25-NOV-2009**	**01-DEC-2009**	02-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved								
A1/MW-8, A4/MW-3,	A1/QS-1, A4/MW-4	**25-NOV-2009**	**01-DEC-2009**	02-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved								
A4/MW-1, A4/MW-7	A4/MW-2,	**26-NOV-2009**	**01-DEC-2009**	03-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved								
A4/MW-5,	A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved								
A1/MW-8, A4/MW-3,	A1/QS-1, A4/MW-4	**25-NOV-2009**	**01-DEC-2009**	02-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved								
A4/MW-1, A4/MW-7	A4/MW-2,	**26-NOV-2009**	**01-DEC-2009**	03-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
Amber Glass Bottle - Unpreserved								
A4/MW-5,	A4/MW-6	**27-NOV-2009**	**01-DEC-2009**	04-DEC-2009	✓	**04-DEC-2009**	10-JAN-2010	✓
EP080: BTEX								
Amber VOC Vial- NaHSO4 or H2SO4								
A1/MW-8, A4/MW-3,	A1/QS-1, A4/MW-4	**25-NOV-2009**	**---**	---	----	**07-DEC-2009**	09-DEC-2009	✓
Amber VOC Vial- NaHSO4 or H2SO4								
A4/MW-1, A4/MW-7	A4/MW-2,	**26-NOV-2009**	**---**	---	----	**07-DEC-2009**	10-DEC-2009	✓
Amber VOC Vial- NaHSO4 or H2SO4								
A4/MW-5,	A4/MW-6	**27-NOV-2009**	**---**	---	----	**07-DEC-2009**	11-DEC-2009	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Alkalinity by PC Titrator	ED037-P	4	39	**10.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Chloride by PC Titrator	ED045-P	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	3	25	**12.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	2	16	**12.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	37	**10.8**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Anions - Dissolved	ED040F	4	30	**13.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	2	17	**11.8**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	36	**11.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	4	30	**13.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
pH	EA005	3	29	**10.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids	EA015	4	33	**12.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	15	**6.7**	**10.0**	×	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	11	**18.2**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	4	**25.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	2	39	**5.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Chloride by PC Titrator	ED045-P	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	2	25	**8.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	16	**6.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	**5.4**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Anions - Dissolved	ED040F	2	30	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	1	17	**5.9**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	2	30	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	**8.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	3	**33.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids	EA015	2	33	**6.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	15	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Chloride by PC Titrator	ED045-P	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	2	25	**8.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	16	**6.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	**5.4**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Major Anions - Dissolved	ED040F	2	30	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	1	17	**5.9**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	2	30	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	**8.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	3	**33.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids	EA015	2	33	**6.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	15	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	4	**25.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Chloride by PC Titrator	ED045-P	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	1	16	**6.3**	**5.0**	✓	ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	**5.4**	**5.0**	✓	ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	36	**5.6**	**5.0**	✓	ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	2	30	**6.7**	**5.0**	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	15	**6.7**	**5.0**	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	11	**9.1**	**5.0**	✓	ALS QCS3 requirement
Volatile Organic Compounds	EP074	1	4	**25.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH	EA005	WATER	APHA 21st ed. 4500 H+ B. pH of water samples is determined by ISE either manually or by automated pH meter. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Conductivity	EA010	WATER	APHA 21st ed., 2510 B Conductivity is determined by ISE, either manually or automated measurement. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Dissolved Solids	EA015	WATER	APHA 21st ed., 2540C A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Alkalinity by PC Titrator	ED037-P	WATER	APHA 21st ed., 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Major Anions - Dissolved	ED040F	WATER	APHA 21st ed., 3120. The 0.45um filtered samples are determined by ICP/AES for Sulfur and/or Silcon content and reported as Sulfate and/or Silica after conversion by gravimetric factor.
Chloride by PC Titrator	ED045-P	WATER	APHA 21st ed., 4500 Cl - B. Automated Silver Nitrate titration.
Major Cations - Dissolved	ED093F	WATER	APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises the 0.45um filtered sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): Samples are 0.45 um filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45 um filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrite as N by Discrete Analyser	EK057G	WATER	APHA 21st ed., 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrate as N by Discrete Analyser	EK058G	WATER	APHA 21st ed., 4500-NO3- F. Nitrate is reduced to nitrite by way of a cadmium reduction column followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	APHA 21st ed., 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Cadmium Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Ionic Balance by PCT and ICPAES	EN055	WATER	APHA 21st Ed. 1030F. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Analytical Methods	Method	Matrix	Method Descriptions
Pesticides by GCMS	EP068	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Volatile Organic Compounds	EP074	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP074A: Monocyclic Aromatic Hydrocarbons	1367734-001	----	**Styrene**	100-42-5	78.6 %	79-115%	**Recovery less than lower control limit**
Matrix Spike (MS) Recoveries							
ED045P: Chloride by PC Titrator	EM0912070-001	A1/MW-8	**Chloride**	16887-00-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK059G: NOX as N by Discrete Analyser	EM0912070-010	A4/MW-6	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP080/071: Total Petroleum Hydrocarbons	EM0912070-002	A1/QS-1	**C6 - C9 Fraction**	----	137 %	70-130%	**Recovery greater than upper control limit**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**

Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP080S: TPH(V)/BTEX Surrogates	EM0912070-003	A4/MW-3	**4-Bromofluorobenzene**	460-00-4	85.5 %	88-110 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EM0912070-005	A4/MW-1	**4-Bromofluorobenzene**	460-00-4	77.7 %	88-110 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EM0912070-007	A4/MW-7	**4-Bromofluorobenzene**	460-00-4	80.8 %	88-110 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EM0912070-009	A4/MW-5	**4-Bromofluorobenzene**	460-00-4	86.6 %	88-110 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EM0912070-004	A4/MW-4	**4-Bromofluorobenzene**	460-00-4	82.3 %	88-110 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **WATER**

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005: pH							
Clear Plastic Bottle - Natural							
A1/MW-8, A4/MW-3,	A1/QS-1, A4/MW-4	----	----	----	01-DEC-2009	25-NOV-2009	**6**
Clear Plastic Bottle - Natural							
A4/MW-1, A4/MW-7	A4/MW-2,	----	----	----	01-DEC-2009	26-NOV-2009	**5**
Clear Plastic Bottle - Natural							
A4/MW-5,	A4/MW-6	----	----	----	01-DEC-2009	27-NOV-2009	**4**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
TPH - Semivolatile Fraction	1	15	6.7	10.0	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

QUALITY CONTROL REPORT

Work Order	: **EM0912070**	Page	: 1 of 16
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 AREA 4 GME	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0104	Date Samples Received	: 27-NOV-2009
Sampler	: KB	Issue Date	: 08-DEC-2009
Order number	: 0779		
		No. of samples received	: 12
Quote number	: ME/281/09	No. of samples analysed	: 12

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Nancy Wang	Instrument Chemist	Organics
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA005: pH (QC Lot: 1180231)									
EM0912033-003	Anonymous	EA005: pH Value	----	0.01	pH Unit	7.29	7.32	0.4	0% - 20%
EM0912060-001	Anonymous	EA005: pH Value	----	0.01	pH Unit	7.43	7.45	0.3	0% - 20%
EA005: pH (QC Lot: 1180232)									
EM0912070-004	A4/MW-4	EA005: pH Value	----	0.01	pH Unit	7.20	7.14	0.8	0% - 20%
EA010: Conductivity (QC Lot: 1180233)									
EM0912033-003	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	216	218	0.9	0% - 20%
EM0912061-003	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	6340	6370	0.5	0% - 20%
EA010: Conductivity (QC Lot: 1180234)									
EM0912070-006	A4/MW-2	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	9330	9340	0.1	0% - 20%
EA015: Total Dissolved Solids (QC Lot: 1179882)									
EM0912043-005	Anonymous	EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	6150	6170	0.3	0% - 20%
EM0912061-002	Anonymous	EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	320	314	1.9	0% - 20%
EA015: Total Dissolved Solids (QC Lot: 1179883)									
EM0912070-002	A1/QS-1	EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	4900	4820	1.6	0% - 20%
EM0912110-001	Anonymous	EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	13300	13000	2.6	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 1181474)									
EM0911860-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	486	486	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	490	486	0.6	0% - 20%
EM0912040-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	70	70	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	70	70	0.0	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 1181479)									
EM0912070-007	A4/MW-7	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	438	439	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	438	439	0.0	0% - 20%
EM0912161-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	90	85	6.5	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	90	85	6.5	0% - 20%
ED040F: Dissolved Major Anions (QC Lot: 1179687)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
ED040F: Dissolved Major Anions (QC Lot: 1179687) - continued									
EM0911988-001	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	100	101	0.0	0% - 20%
EM0912043-001	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	<1	0.0	No Limit
ED040F: Dissolved Major Anions (QC Lot: 1179692)									
EM0912070-001	A1/MW-8	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	354	360	1.8	0% - 20%
EM0912110-001	Anonymous	ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	14000	14500	3.2	0% - 20%
ED045P: Chloride by PC Titrator (QC Lot: 1181478)									
EM0912067-001	Anonymous	ED045-P: Chloride	16887-00-6	1	mg/L	264	270	1.9	0% - 20%
EM0912070-007	A4/MW-7	ED045-P: Chloride	16887-00-6	1	mg/L	2980	3500	16.2	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 1179691)									
EM0912052-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	46	47	0.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	249	250	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1600	1600	0.2	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	21	21	0.0	0% - 20%
EM0912070-001	A1/MW-8	ED093F: Calcium	7440-70-2	1	mg/L	180	177	1.3	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	177	179	1.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1010	1020	0.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	24	24	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1181499)									
EM0911898-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.032	0.031	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.021	0.022	0.0	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.644	0.651	1.1	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.002	0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.022	0.022	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	0.05	0.04	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	5.64	5.52	2.2	0% - 20%
EM0912053-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.044	0.043	0.0	0% - 20%
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1181499) - continued									
EM0912053-006	Anonymous	EG020A-F: Barium	7440-39-3	0.001	mg/L	0.319	0.323	1.1	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.087	0.087	0.0	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.015	0.015	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.18	0.18	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1181500)									
EM0912070-006	A4/MW-2	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.094	0.094	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.010	0.010	0.0	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.019	0.018	0.0	0% - 50%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.041	0.040	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.22	0.22	0.0	No Limit
EM0912161-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.167	0.167	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 1181500) - continued									
EM0912161-001	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.172	0.180	4.8	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.043	0.042	0.0	0% - 20%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.014	0.013	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 1181498)									
EM0911898-005	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM0912070-007	A4/MW-7	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1179690)									
EM0912052-001	Anonymous	EK057G: Nitrite as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EM0912070-001	A1/MW-8	EK057G: Nitrite as N	----	0.01	mg/L	0.08	0.08	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1179693)									
EM0912070-001	A1/MW-8	EK057G: Nitrite as N	----	0.01	mg/L	0.08	<0.01	157	No Limit
EM0912110-001	Anonymous	EK057G: Nitrite as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: NOX as N by Discrete Analyser (QC Lot: 1182175)									
EM0911898-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.14	0.13	0.0	0% - 50%
EM0912032-012	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	6.67	6.72	0.7	0% - 20%
EK059G: NOX as N by Discrete Analyser (QC Lot: 1182176)									
EM0912070-009	A4/MW-5	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	1.28	1.26	1.0	0% - 20%
EM0912096-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.0	No Limit
EP074B: Oxygenated Compounds (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.0	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074C: Sulfonated Compounds (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.0	No Limit
EP074D: Fumigants (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.0	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.0	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.0	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.0	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.0	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.0	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.0	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.0	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 1184506) - continued									
EM0912070-001	A1/MW-8	EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.0	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.0	No Limit
EP074G: Trihalomethanes (QC Lot: 1184506)									
EM0912070-001	A1/MW-8	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.0	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.0	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1180158)									
EM0912080-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	180	<200	9.1	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<100	66.7	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	140	<100	36.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1184507)									
EM0912070-001	A1/MW-8	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EM0912127-013	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEX (QC Lot: 1184507)									
EM0912070-001	A1/MW-8	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
EM0912127-013	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA010: Conductivity (QCLot: 1180233)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1413 µS/cm	101	98	102
EA010: Conductivity (QCLot: 1180234)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1413 µS/cm	101	98	102
EA015: Total Dissolved Solids (QCLot: 1179882)								
EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	<1	2000 mg/L	103	97	107
EA015: Total Dissolved Solids (QCLot: 1179883)								
EA015: Total Dissolved Solids @180°C	GIS-210-010	1	mg/L	<1	2000 mg/L	104	97	107
ED037P: Alkalinity by PC Titrator (QCLot: 1181474)								
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	----	200 mg/L	111	86	118
ED037P: Alkalinity by PC Titrator (QCLot: 1181479)								
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	----	200 mg/L	110	86	118
ED040F: Dissolved Major Anions (QCLot: 1179687)								
ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	300 mg/L	97.7	83	121
ED040F: Dissolved Major Anions (QCLot: 1179692)								
ED040F: Sulfate as SO4 2-	14808-79-8	1	mg/L	<1	300 mg/L	104	83	121
ED045P: Chloride by PC Titrator (QCLot: 1181478)								
ED045-P: Chloride	16887-00-6	1	mg/L	<1	1000 mg/L	102	81.7	120
ED093F: Dissolved Major Cations (QCLot: 1179691)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	94.1	90	124
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	105	82	122
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	84	118
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	103	83	121
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181499)								
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	96.6	82	126
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	89	109
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	80.8	73	123
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	103	85	109
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.4	92	112
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	88	110
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	104	86	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	106	89	113
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	92	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.3	88	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181499) - continued								
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	94.8	86	106
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	107	87	111
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	86.6	84	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	97.0	90	112
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	105	88	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	88	116
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	97.7	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181500)								
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	100	82	126
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	89	109
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	95.3	73	123
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	104	85	109
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	92	112
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	88	110
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	105	86	112
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	105	89	113
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	92	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.3	88	110
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	95.1	86	106
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	106	87	111
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	89.0	84	112
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	97.6	90	112
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	105	88	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	88	116
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	109	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 1181498)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	98.1	76	124
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1179690)								
EK057G: Nitrite as N	----	0.01	mg/L	<0.01	0.5 mg/L	103	89.9	105
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1179693)								
EK057G: Nitrite as N	----	0.01	mg/L	<0.01	0.5 mg/L	102	89.9	105
EK059G: NOX as N by Discrete Analyser (QCLot: 1182175)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	96.6	76.5	120
EK059G: NOX as N by Discrete Analyser (QCLot: 1182176)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	80.8	76.5	120
EP068A: Organochlorine Pesticides (OC) (QCLot: 1180157)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	86.7	54.4	126
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	75.1	55	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 1180157) - continued								
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	82.4	54.5	131
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	89.0	54.5	126
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	82.8	56.2	131
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	80.2	56.4	126
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	80.3	61.7	123
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	81.3	62.4	126
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	82.6	62.1	126
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	82.7	62.9	129
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	81.8	58.2	130
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	81.2	61.4	129
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	84.8	63.2	128
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	81.0	61.2	134
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	84.4	64.1	129
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	83.5	64.5	128
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	117	58.5	132
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	81.8	60.2	134
EP068: 4.4`-DDT	50-29-3	2.0	µg/L	<2	5 µg/L	81.0	51.8	138
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	82.5	62.4	130
EP068: Methoxychlor	72-43-5	2.0	µg/L	<2	5 µg/L	84.3	45.9	139
EP068B: Organophosphorus Pesticides (OP) (QCLot: 1180157)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	78.1	39.9	137
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	76.1	45.1	133
EP068: Monocrotophos	6923-22-4	2.0	µg/L	<2	5 µg/L	23.2	15	93.5
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	102	31.7	129
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	75.5	59.1	125
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	70.6	60.6	126
EP068: Parathion-methyl	298-00-0	2.0	µg/L	<2	5 µg/L	69.8	53.3	133
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	70.9	57.3	135
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	75.1	59.5	128
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	71.9	60.3	130
EP068: Parathion	56-38-2	2.0	µg/L	<2	5 µg/L	69.9	53.4	134
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	72.4	59.7	128
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	73.1	54.8	139
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	93.0	60.1	129
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	68.7	44.8	141
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	72.4	60	129
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	73.6	58.2	132
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	72.7	58.9	132
EP068: Azinphos Methyl	----	0.5	µg/L	<0.5	5 µg/L	65.6	35.5	153

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Recovery Limits (%)
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1184506)								
EP074: Styrene	100-42-5	5	µg/L	<5	20 µg/L	# 78.6	79	115
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	20 µg/L	79.0	77	115
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	20 µg/L	96.5	73	119
EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	20 µg/L	97.7	77	117
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	20 µg/L	96.5	74	118
EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	20 µg/L	96.4	77	117
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	20 µg/L	96.3	78	118
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	20 µg/L	98.5	71	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	20 µg/L	98.0	64	120
EP074B: Oxygenated Compounds (QCLot: 1184506)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	200 µg/L	93.5	50	138
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	200 µg/L	104	73	135
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	200 µg/L	109	73	137
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	200 µg/L	83.8	72	130
EP074C: Sulfonated Compounds (QCLot: 1184506)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	20 µg/L	99.6	74	128
EP074D: Fumigants (QCLot: 1184506)								
EP074: 2.2-Dichloropropane	594-20-7	5	µg/L	<5	20 µg/L	104	69	123
EP074: 1.2-Dichloropropane	78-87-5	5	µg/L	<5	20 µg/L	113	82	122
EP074: cis-1.3-Dichloropropylene	10061-01-5	5	µg/L	<5	20 µg/L	115	82	120
EP074: trans-1.3-Dichloropropylene	10061-02-6	5	µg/L	<5	20 µg/L	105	80	122
EP074: 1.2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	20 µg/L	83.4	80	120
EP074E: Halogenated Aliphatic Compounds (QCLot: 1184506)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	200 µg/L	90.9	58	148
EP074: Chloromethane	74-87-3	50	µg/L	<50	200 µg/L	111	66	138
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	200 µg/L	123	63	159
EP074: Bromomethane	74-83-9	50	µg/L	<50	200 µg/L	104	68	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	200 µg/L	107	74	128
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	200 µg/L	108	74	130
EP074: 1.1-Dichloroethene	75-35-4	5	µg/L	<5	20 µg/L	106	76	126
EP074: Iodomethane	74-88-4	5	µg/L	<5	20 µg/L	74.8	67	133
EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	20 µg/L	107	78	122
EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	20 µg/L	103	80	122
EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	20 µg/L	104	82	122
EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	20 µg/L	115	78	122
EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	20 µg/L	109	77	121
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	20 µg/L	116	74	126
EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	20 µg/L	106	81	125

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074E: Halogenated Aliphatic Compounds (QCLot: 1184506) - continued								
EP074: Trichloroethene	79-01-6	5	µg/L	<5	20 µg/L	110	76	124
EP074: Dibromomethane	74-95-3	5	µg/L	<5	20 µg/L	102	81	127
EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	20 µg/L	84.3	80	120
EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	20 µg/L	87.0	82	120
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	20 µg/L	80.4	71	125
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	20 µg/L	84.0	77	117
EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	20 µg/L	80.6	68	124
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	20 µg/L	76.9	70	124
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	20 µg/L	89.3	76	126
EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	20 µg/L	88.6	74	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	20 µg/L	106	57	131
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	20 µg/L	98.7	73	133
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	20 µg/L	105	51	121
EP074F: Halogenated Aromatic Compounds (QCLot: 1184506)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	20 µg/L	79.6	78	116
EP074: Bromobenzene	108-86-1	5	µg/L	<5	20 µg/L	100	80	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	20 µg/L	95.9	76	118
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	20 µg/L	96.7	74	116
EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	20 µg/L	97.0	75	115
EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	20 µg/L	96.8	76	114
EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	20 µg/L	102	79	115
EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	20 µg/L	103	56	118
EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	20 µg/L	108	67	117
EP074G: Trihalomethanes (QCLot: 1184506)								
EP074: Chloroform	67-66-3	5	µg/L	<5	20 µg/L	108	82	122
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	20 µg/L	115	81	125
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	20 µg/L	93.4	79	123
EP074: Bromoform	75-25-2	5	µg/L	<5	20 µg/L	95.3	71	129
EP075(SIM)A: Phenolic Compounds (QCLot: 1180159)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	35.2	12.4	60
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	82.3	28.2	119
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	65.9	32.7	119
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	5 µg/L	66.9	27.1	119
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	99.2	50.2	147
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	98.4	31.2	142
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	94.2	44	143
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	93.8	45.4	131
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	91.8	45.2	133
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	85.9	45.8	125

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 1180159) - continued								
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	94.6	45.7	126
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	5 µg/L	49.6	45.3	149
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1180159)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	94.4	50	131
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	83.4	49.3	121
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	102	56.8	129
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	99.7	58.4	127
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	94.0	62.2	131
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	97.3	61.1	128
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	95.6	61.2	132
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	98.0	64	133
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	98.3	64.3	138
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	98.1	60.2	133
EP075(SIM): Benzo(b)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	97.1	61.6	142
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	104	55.1	133
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	96.4	57.7	133
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	98.4	64.2	135
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	95.2	63.2	136
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	97.8	64.3	136
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1180158)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	798 µg/L	72.7	64	124
EP071: C15 - C28 Fraction	----	100	µg/L	<100	804 µg/L	82.8	70	130
EP071: C29 - C36 Fraction	----	50	µg/L	<50	800 µg/L	87.9	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1184507)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	320 µg/L	91.9	71	131
EP080: BTEX (QCLot: 1184507)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.8	71	131
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	90.8	70	130
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	83.9	70	130
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	90.2	69	129
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	89.6	70	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED045P: Chloride by PC Titrator (QCLot: 1181478)							
EM0912070-001	A1/MW-8	ED045-P: Chloride	16887-00-6	490 mg/L	# Not Determined	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181499)							
EM0911898-005	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	121	70	130
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	89.2	70	130
		EG020A-F: Barium	7440-39-3	0.2 mg/L	115	70	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	103	70	130
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	110	70	130
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	122	70	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	113	70	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	107	70	130
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	95.4	70	130
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	118	70	130
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	116	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	102	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 1181500)							
EM0912070-006	A4/MW-2	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	118	70	130
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	108	70	130
		EG020A-F: Barium	7440-39-3	0.2 mg/L	110	70	130
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	113	70	130
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	107	70	130
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	117	70	130
		EG020A-F: Copper	7440-50-8	0.2 mg/L	109	70	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	104	70	130
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	105	70	130
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	111	70	130
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	115	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	108	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 1181498)							
EM0911965-001	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	99.3	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1179690)							
EM0912043-002	Anonymous	EK057G: Nitrite as N	----	0.5 mg/L	130	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 1179693)							
EM0912070-002	A1/QS-1	EK057G: Nitrite as N	----	0.5 mg/L	112	70	130
EK059G: NOX as N by Discrete Analyser (QCLot: 1182175)							

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: Spike Recovery (%) MS	Matrix Spike (MS) Report: Recovery Limits (%) Low	Matrix Spike (MS) Report: Recovery Limits (%) High
EK059G: NOX as N by Discrete Analyser (QCLot: 1182175) - continued							
EM0911980-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	103	70	130
EK059G: NOX as N by Discrete Analyser (QCLot: 1182176)							
EM0912070-010	A4/MW-6	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 1184506)							
EM0912070-002	A1/QS-1	EP074: 1.1-Dichloroethene	75-35-4	20 µg/L	79.0	70	130
		EP074: Trichloroethene	79-01-6	20 µg/L	112	70	130
EP074F: Halogenated Aromatic Compounds (QCLot: 1184506)							
EM0912070-002	A1/QS-1	EP074: Chlorobenzene	108-90-7	20 µg/L	121	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1180158)							
EM0912080-002	Anonymous	EP071: C10 - C14 Fraction	----	798 µg/L	81.7	70	130
		EP071: C15 - C28 Fraction	----	804 µg/L	94.8	70	130
		EP071: C29 - C36 Fraction	----	800 µg/L	82.2	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 1184507)							
EM0912070-002	A1/QS-1	EP080: C6 - C9 Fraction	----	280 µg/L	# 137	70	130
EP080: BTEX (QCLot: 1184507)							
EM0912070-002	A1/QS-1	EP080: Benzene	71-43-2	20 µg/L	100	70	130
		EP080: Toluene	108-88-3	20 µg/L	87.0	70	130

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **EM0912070**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR KAYNE BEGBIE	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: kbegbie@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 1001 AREA 4 GME	Page	: 1 of 3
Order number	: 0779		
C-O-C number	: 0104	Quote number	: EM2009OTEK0282 (ME/281/09)
Site	: ----		
Sampler	: KB	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 27-NOV-2009	Issue Date	: 01-DEC-2009 08:34
Client Requested Due Date	: 07-DEC-2009	Scheduled Reporting Date	: **07-DEC-2009**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 9-10 - Ice present
No. of coolers/boxes	: 2	No. of samples received	: 12
Sercurity Seal	: Intact.	No. of samples analysed	: 12

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Sample(s) have been received within recommended holding times with the exception for pH analysis on those samples collected 25/11/09 and 26/11/09.**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- **Samples A1/MW-8 and A1/QS-1 were received labelled A4/MW-8 and A4/QS-1.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EA005: pH pH	WATER - EA010 Conductivity	WATER - EA015 Total Dissolved Solids	WATER - EG020F Dissolved Metals by ICPMS	WATER - EN055 Ionic Balance	WATER - EP074 (water) Volatile Organic Compounds	WATER - NT-01 Major Cations (Ca, Mg, Na, K)	WATER - NT-02 (EM) Major Anions (Cl, SO4, Alkalinity)
EM0912070-001	25-NOV-2009 15:00	A1/MW-8	✓	✓	✓	✓	✓	✓	✓	✓
EM0912070-002	25-NOV-2009 15:00	A1/QS-1	✓	✓	✓	✓	✓	✓	✓	✓
EM0912070-003	25-NOV-2009 15:00	A4/MW-3	✓	✓	✓	✓	✓		✓	✓
EM0912070-004	25-NOV-2009 15:00	A4/MW-4	✓	✓	✓	✓	✓		✓	✓
EM0912070-005	26-NOV-2009 15:00	A4/MW-1	✓	✓	✓	✓	✓		✓	✓
EM0912070-006	26-NOV-2009 15:00	A4/MW-2	✓	✓	✓	✓	✓		✓	✓
EM0912070-007	26-NOV-2009 15:00	A4/MW-7	✓	✓	✓	✓	✓		✓	✓
EM0912070-008	26-NOV-2009 15:00	A4/RB-2				✓				
EM0912070-009	27-NOV-2009 15:00	A4/MW-5	✓	✓	✓	✓	✓		✓	✓
EM0912070-010	27-NOV-2009 15:00	A4/MW-6	✓	✓	✓	✓	✓		✓	✓
EM0912070-011	27-NOV-2009 15:00	A4/RB-3				✓				
EM0912070-012	27-NOV-2009 15:00	A4/TB-2				✓				

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - NT-04 Nitrite and Nitrate	WATER - W-03A 17 Metals	WATER - W-04 TPH/BTEX	WATER - W-07 TPH/BTEX/PAH	WATER - W-12 OC/OP Pesticides	WATER - W-14A PAH/Phenols (SIM)
EM0912070-001	25-NOV-2009 15:00	A1/MW-8	✓	✓	✓			✓
EM0912070-002	25-NOV-2009 15:00	A1/QS-1	✓	✓	✓			✓
EM0912070-003	25-NOV-2009 15:00	A4/MW-3	✓	✓		✓		
EM0912070-004	25-NOV-2009 15:00	A4/MW-4	✓	✓		✓		
EM0912070-005	26-NOV-2009 15:00	A4/MW-1	✓	✓		✓		
EM0912070-006	26-NOV-2009 15:00	A4/MW-2	✓	✓		✓		
EM0912070-007	26-NOV-2009 15:00	A4/MW-7	✓	✓		✓		
EM0912070-008	26-NOV-2009 15:00	A4/RB-2		✓				
EM0912070-009	27-NOV-2009 15:00	A4/MW-5	✓	✓		✓		
EM0912070-010	27-NOV-2009 15:00	A4/MW-6	✓	✓		✓	✓	
EM0912070-011	27-NOV-2009 15:00	A4/RB-3		✓				
EM0912070-012	27-NOV-2009 15:00	A4/TB-2		✓				

Requested Deliverables

MR GURDEEP KHOSA

- *AU Certificate of Analysis - NATA (COA)	Email	gkhosa@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	gkhosa@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	gkhosa@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	gkhosa@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	gkhosa@otek.com.au
- Default - Chain of Custody (COC)	Email	gkhosa@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	gkhosa@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	gkhosa@otek.com.au

MR KAYNE BEGBIE

- *AU Certificate of Analysis - NATA (COA)	Email	kbegbie@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	kbegbie@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	kbegbie@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	kbegbie@otek.com.au
- Default - Chain of Custody (COC)	Email	kbegbie@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	kbegbie@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	kbegbie@otek.com.au

MR LUKE DAL LAGO

- *AU Certificate of Analysis - NATA (COA)	Email	ldallago@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ldallago@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ldallago@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	ldallago@otek.com.au
- Default - Chain of Custody (COC)	Email	ldallago@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	ldallago@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	ldallago@otek.com.au

MR TOM SANTWYK-ANDERSON

- *AU Certificate of Analysis - NATA (COA)	Email	tsantwyk-anderson@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	tsantwyk-anderson@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	tsantwyk-anderson@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	tsantwyk-anderson@otek.com.au
- Default - Chain of Custody (COC)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	tsantwyk-anderson@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	tsantwyk-anderson@otek.com.au

MS EMILY BURKE

- *AU Certificate of Analysis - NATA (COA)	Email	eburke@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	eburke@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	eburke@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	eburke@otek.com.au
- Default - Chain of Custody (COC)	Email	eburke@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	eburke@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	eburke@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA (COA)	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	vicreception@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental (SRN)	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	vicreception@otek.com.au
- Default - Chain of Custody (COC)	Email	vicreception@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	vicreception@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	vicreception@otek.com.au

COC NUMBER: 0104

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
gkhosa@otek.com.au
kbeattie@otek.com.au

OTEK AUSTRALIA PTY LTD

Page 1 of 1

LAB ALS
ADDRESS Westall Rd Springvale
LAB CONTACT
PHONE

PROJECT # 3106004/1001
PROJECT NAME Area 4 GME
COLLECTORS NAME Kayne
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL
FINAL REPORT BY: 1 week T/A
LAB QUOTE REF: ME/281/09
OTEK PO No.: 0779
REMARKS

	SAMPLE ID	DEPTH (metres)	LAB #	MATRIX	PRESERVATION METHOD				SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE											
				Soil / Water / Sludge / Air	ICE	ACIDIFIED	OTHER	NONE			Metals (M10)	BTEX, TPH, PAH	TDS, EC, PH,	Nitrate, Nitrite	Alkalinity, Sulphate, Total Cyanide	Anions	Chloride	Ca, Mg, Na, K	VOCs, Phenols	OC/OPs		
	DISCRETE SAMPLE REQUEST:																					
1	A4 A1/MW-8			W	X	X			25/11/09	S									X			
2	A4 A1/QS-1			W	X	X			"	S									X			
3	A4/MW-3			W	X	X			"	S												
4	A4/MW-4			W	X	X			"	S												
5	A4/MW-1			W	X	X			26/11/09	S												
6	A4/MW-2			W	X	X			"	S												
7	A4/MW-7			W	X	X			"	S												
8	A4/RB-2			W	X	X			"	1	X											
9	A4/MW-5			W	X	X			27/11/09	S										X		
10	A4/MW-6			W	X	X			"	S												
11	A4/RB-3			W	X	X			"	1	X											
12	A4/TB-2			W	X	X			"	1	X											

Environmental Division
Melbourne
Work Order
EM0912070

Telephone : +61-3-8549 9600

SAMPLES SENT TO LAB
MICRO NITRATE FERROUS
OTHER Rec 27/11/09

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Kayne Beattie (Signature)

Date 27/11/09

Additional Comments:

Relinquished by: Kayne B	Date 27/11	Time 1448	Received by: 438	Date 3.15pm 27/11	Time	Custody Seals Intact? Yes / No / NA	
Relinquished by: 438	Date	Time 4.40pm	Received by: RM / ALS 4.40	Date	Time	Samples Received Chilled? Yes / No	
Relinquished by:	Date	Time	Received by: 27/11/09 10.12.0	Date	Time		

Please provide electronic results in ESDAT format

COC NUMBER: 0104

LAB ALS
ADDRESS Westall Rd
LAB CONTACT Springvale
PHONE

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
gkhosa@otek.com.au
kbeglie

OTEK AUSTRALIA PTY LTD

PROJECT #	PROJECT NAME
3106004/1001	Area 4 GME

COLLECTORS NAME	LAB JOB #
Kayne	

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL

FINAL REPORT BY: 1 week T/A

LAB QUOTE REF: ME/281/09 | OTEK PO No.: 0779

	SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	Metals (Mn10)	BTEX, TPH, PAH	TDS, EC, pH	Nitrate, Nitrite	Alkalinity, Sulphate	Total Cyanide	Chloride	Ca, Mg, Na, K	VOC's, Phenols	OC / OPs	REMARKS
DISCRETE SAMPLE REQUEST:																					
1	A4 A1/MW-8			W	X	X			25/11/09	S									X		
2	A4 A1/QS-1			W	X	X			"	S									X		
3	A4/MW-3			W	X	X			"	S											
4	A4/MW-4			W	X	X			"	S											
5	A4/MW-1			W	X	X			26/11/09	S											
6	A4/MW-2			W	X	X			"	S											
7	A4/MW-7			W	X	X			"	S											
8	A4/RB-2			W	X	X			"	1	X										
9	A4/MW-5			W	X	X			27/11/09	S											
10	A4/MW-6			W	X	X			"	S										X	
11	A4/RB-3			W	X	X			"	1	X										
12	A4/TB-2			W	X	X			"	1	X										

Environmental Division
Melbourne
Work Order
EM0912070

Telephone : +61-3-8549 9600

SAMPLES SENT TO LAB
MICRO NITRATE FERROUS
OTHER Rec 27/11/09

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Kayne Beglie (Signature)

Date 27/11/09

Relinquished by:	Date	Time	Received by:	Date	Time
Kayne B	27/11	1448	438	3.15pm	27/11
438		4.40pm	RL / Ahs 440		
			27/11/09 10.12.0		

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

Additional Comments:

Please provide electronic results in ESDAT format

DW 30/11/09

Ranil Weerakkody

From: Kayne Begbie [kbegbie@otek.com.au]
Sent: Monday, 30 November 2009 10:00 AM
To: Samples Melbourne
Subject: FW: Scanned from MFP-06937376 30/11/2009 08:53

Attachments: DOC301109.pdf

DOC301109.pdf (7 MB)

Hi Ranil,

please find the correct sample names circled on the attached COC's. the names on the bottles are incorrect!

cheers, kayne

Kayne Begbie - Project Manager

T: 03 9095 1925 (Direct) T: 03 9525 5155 (Switch) F: 03 9593 8555

M: 0401 863 379 E: kbegbie@otek.com.au W: www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

-----Original Message-----
From: OTEK Australia St Kilda [mailto:toshiba@otek.com.au]
Sent: Monday, 30 November 2009 9:53 AM
To: Kayne Begbie
Subject: Scanned from MFP-06937376 30/11/2009 08:53

Scanned from MFP-06937376.
Date: 30/11/2009 08:53
Pages:2
Resolution:400x400 DPI

COC NUMBER: 0104

LAB	ALS
ADDRESS	W... Rd
LAB CONTACT	Spring...
PHONE	

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
gk... @otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT #	PROJECT NAME	COLLECTORS NAME	LAB JOB #
3106004 1001	... 4 GME	K...	

ANALYSIS REQUIRED & METHOD CODE: Metals (NEB) / BTEX - TPH PAH / TDS, EC, pH / Nitrate, Nitrite / Alkalinity, Sulphate / Ammonia, Total Kjeldahl / Chloride / Ca Mg Na K

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: 1 week T/A

LAB QUOTE REF: ME/... /09

OTEK PO No.: 0379

REMARKS

SAMPLE ID (DISCRETE SAMPLE REQUEST)	DEPTH (metres)	LAB #	MATRIX (Soil Water Sludge Air)	ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	Analysis
A1 / MW-8			W	X	X			25/11/..	5	
A.. / QS ..			W	X	X			"	5	
MW-3			W	X	X			"	5	
MW-4			W	X	X			"	5	
A.. / MW-.			W	X	X			26/11/09	5	
.. / MW-.			W	X	X			"	5	
A4 / MW-7			W	X	X			"	5	
A.. / RB ..			W	X				"	1	X
A.. / MW-5			W	X	X			27/11/09	5	
A4 / MW-6			W		X			"	5	X
A4 / RB 2			W		X			"	1	X
A4 / TB 2			W		X			"	1	X

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) K... ...ke (Signature) K... Date ../../09

Relinquished by:	Date	Time	Received by:	Date	Time	
K...yre	27/..	14..				Custody Seals Intact? Yes / No / NA
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled? Yes / No
Relinquished by:	Date	Time	Received by:	Date	Time	

Additional Comments:

Please provide electronic results in ESDAT format

DATA VALIDATION REPORT

Project Name:	Werribee Hydrogeological Assessment	**Validation Conducted by:**	TB
Project Number:	3106004	**Signed & Dated:**	29/02/2012
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	ALS	**Secondary Laboratory:**	Groundswell	**Soil**
Batch Number:	EM1114048	**Batch Number:**	GS11486	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
11	1	1	4

Have the Following Criteria Been Met? (Shade)

				Explain any Discrepancies:
Blind Replicate	OK if >5%	9.0909	NOT OK if <5%	QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.
Split Sample	OK if >5%	9.0909	NOT OK if <5%	QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.
Blank Samples	OK	4	NOT OK	Field blank sampling has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

2 Rinsate
Field
2 Trip

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)
1	Number obtained	1
QW-1-081211	Sample Identification	QW-1A-081211
64 (A)	Total Number of Analytes	53 (B)
1	No. of analytes with RPD >50% (Fail)	1
63	Number of analytes <50% (Pass)	52
98.4	% Pass	98.1

Explain any Discrepancies:

QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

QW-1-081211 - Exceedance for Cobalt with an RPD of 67%.

QW-1A-081211 - Exceedance for Nitrate (as N) with an RPD of 125%.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	2		2
Sample Identifictaion	TB-1-091211 TB-2-091211		RB-1-071211 RB-2-081211
Number of Analytes	18		18
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	D	E

Explain any Discrepancies:

Trip blank sampling has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	No. Passes	11	-
	No. Fails	0	-
Analysis	No. Passes	28	-
	No. Fails	2	-

Explain any Discrepancies:

Fails were due to holding time breaches for Nitrite and Nitrate as N

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: **Laboratory Data Quality - Refer to Certificate of Analysis**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	118	2
# samples RPD >50% **(FAIL)**	1	0
% Pass	99	100

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

QW-1-081211 - Antimony had an RPD>50%

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	78	55
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	76	30
# analytes outside range i.e <70% or >130% **(FAIL)**	15	3
% Pass	80	90

Surrogates

OK (>95%)	85
NOT OK (<95%)	

Explanation for Failures:

QW-1-081211: 14 analysis for PAH and one analysis for TPH fell outside the acceptable Surrogate Internal Spike Recovery range for anonymous samples.

QW-1A-081211: 2 analysis for PAH and one analysis for TRH fell outside the acceptable Surrogate Internal Spike Recovery range for anonymous samples.

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	34	
# Analytes outside range i.e <70% or >130%	0	
% Pass	100	-

Internal Spikes

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

FINAL DATA

A	
B	
C	
D	
E	
F & G	
H & I	
J & K	
L & M	

Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
Primary Duplicates	1	64	98.4
Secondary Duplicates	1	53	98.1
Trip Blanks	0	18	100.0
Field Blanks	0	0	-
Rinsate Blanks	0	18	100.0
Lab Internal Duplicates	1	120	99.2
Lab Method Blanks	0	133	100.0
Lab Internal Spike Recoveries	18	106	83.0
Laboratory Spike Recoveries	0	34	100.0
Total	**21**	**546**	**96.2**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

INSPECTION VERIFICATION RECORD

PASS	FAIL
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NAME (Print) TIFFANY BANH
SIGNATURE
DATE 01/03/2012

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM1114048**	Page	: 1 of 12
Amendment	: **1**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Sarah Hodgson
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Project	: 3106004 WERRIBEE GME #5	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 3677		
C-O-C number	: 0148-0149	Date Samples Received	: 09-DEC-2011
Sampler	: LD	Issue Date	: 22-DEC-2011
Site	: ----		
		No. of samples received	: 16
Quote number	: EN/018/11	No. of samples analysed	: 16

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

WORLD RECOGNISED ACCREDITATION

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics
Emily Yuen	Organic Chemist	Melbourne Organics
Eric Chau	Metals Team Leader	Melbourne Inorganics
Varsha Ho Wing	Non-Metals Team Leader	Melbourne Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.**
- **This report has been amended following changes to the analytical data reported. The quality system is being utilised to resolve this issue. The specific data affected includes metal results for EM1114048 #3.**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-1	MW-2	MW-3	MW-4	MW-5
				Client sampling date / time: 07-DEC-2011 15:00	07-DEC-2011 15:00	08-DEC-2011 15:00	08-DEC-2011 15:00	07-DEC-2011 15:00
				EM1114048-001	EM1114048-002	EM1114048-003	EM1114048-004	EM1114048-005
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	**8200**	**8940**	**7720**	**6320**	**8730**
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	GIS-210-010	5	mg/L	**4570**	**5060**	**4520**	**3780**	**5100**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**345**	**340**	**313**	**319**	**213**
Total Alkalinity as CaCO3	----	1	mg/L	**345**	**340**	**313**	**319**	**213**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**342**	**359**	**281**	**253**	**207**
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	**2880**	**3230**	**2750**	**1810**	**3200**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**195**	**239**	**274**	**206**	**244**
Magnesium	7439-95-4	1	mg/L	**290**	**335**	**266**	**162**	**267**
Sodium	7440-23-5	1	mg/L	**1200**	**1250**	**1100**	**741**	**1250**
Potassium	7440-09-7	1	mg/L	**16**	**17**	**12**	**9**	**22**
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	**0.003**	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	**0.001**	<0.001	**0.001**	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	**0.169**	**0.083**	**0.109**	**0.048**	**0.094**
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	**0.001**	<0.001	<0.001
Chromium	7440-47-3	0.001	mg/L	**0.003**	**0.002**	**0.001**	<0.001	**0.004**
Copper	7440-50-8	0.001	mg/L	**0.006**	**0.008**	**0.003**	**0.001**	**0.004**
Manganese	7439-96-5	0.001	mg/L	**0.004**	**0.001**	**0.003**	**0.002**	**0.002**
Nickel	7440-02-0	0.001	mg/L	**0.011**	**0.010**	**0.010**	**0.001**	**0.012**
Lead	7439-92-1	0.001	mg/L	<0.001	**0.001**	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	**0.043**	**0.043**	**0.020**	**0.009**	**0.044**
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	**0.001**	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L	**0.01**	**0.01**	**0.01**	<0.01	<0.01
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L	**0.34**	**0.23**	**0.13**	**0.12**	**0.39**
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-1	MW-2	MW-3	MW-4	MW-5
				Client sampling date / time: 07-DEC-2011 15:00	07-DEC-2011 15:00	08-DEC-2011 15:00	08-DEC-2011 15:00	07-DEC-2011 15:00
				EM1114048-001	EM1114048-002	EM1114048-003	EM1114048-004	EM1114048-005
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	----	<0.01	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	----	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**4.23**	**3.06**	**3.91**	**2.93**	**1.24**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**4.23**	**3.06**	**3.91**	**2.93**	**1.24**
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**95.2**	**105**	**89.7**	**62.7**	**98.8**
Total Cations	----	0.01	meq/L	**86.2**	**94.3**	**83.7**	**56.1**	**89.1**
Ionic Balance	----	0.01	%	**4.99**	**5.55**	**3.44**	**5.58**	**5.19**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	----	----	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	----	----	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	----	----	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	----	----	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft								
C6 - C10 Fraction	----	20	µg/L	**30**	----	----	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	----	20	µg/L	**30**	----	----	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	<100	<100
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	----	----	<1	<1
Toluene	108-88-3	2	µg/L	<2	----	----	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	<2	<2
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	----	----	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	----	----	<5	<5
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**73.6**	----	----	**88.8**	**94.7**
Toluene-D8	2037-26-5	0.1	%	**87.9**	----	----	**105**	**95.6**
4-Bromofluorobenzene	460-00-4	0.1	%	**89.2**	----	----	**97.1**	**89.5**

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-6	MW-7	MW-8	MW-9	MW-10
				Client sampling date / time: 07-DEC-2011 15:00	07-DEC-2011 15:00	07-DEC-2011 15:00	08-DEC-2011 15:00	08-DEC-2011 15:00
				EM1114048-006	EM1114048-007	EM1114048-008	EM1114048-009	EM1114048-010
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	**10100**	**11900**	**8930**	**10200**	**10200**
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	GIS-210-010	5	mg/L	**5740**	**7100**	**5500**	**6280**	**6190**
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**380**	**358**	**320**	**209**	**214**
Total Alkalinity as CaCO3	----	1	mg/L	**380**	**358**	**320**	**209**	**214**
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**396**	**395**	**356**	**274**	**273**
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	**3590**	**3770**	**3110**	**3800**	**3880**
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**293**	**371**	**232**	**389**	**409**
Magnesium	7439-95-4	1	mg/L	**403**	**445**	**192**	**357**	**376**
Sodium	7440-23-5	1	mg/L	**1350**	**1260**	**1450**	**1350**	**1250**
Potassium	7440-09-7	1	mg/L	**17**	**26**	**28**	**17**	**17**
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	<0.001	**0.002**	<0.001	**0.001**	<0.001
Barium	7440-39-3	0.001	mg/L	**0.211**	**0.072**	**0.042**	**0.128**	**0.163**
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	**0.0001**	<0.0001
Cobalt	7440-48-4	0.001	mg/L	<0.001	**0.001**	<0.001	**0.002**	<0.001
Chromium	7440-47-3	0.001	mg/L	**0.001**	<0.001	**0.003**	<0.001	**0.002**
Copper	7440-50-8	0.001	mg/L	**0.004**	**0.004**	**0.005**	**0.006**	**0.003**
Manganese	7439-96-5	0.001	mg/L	**0.005**	**0.016**	**0.009**	**0.021**	**0.002**
Nickel	7440-02-0	0.001	mg/L	**0.006**	**0.012**	**0.007**	**0.100**	**0.005**
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	**0.001**	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	**0.016**	**0.020**	**0.019**	**0.100**	**0.022**
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L	**0.31**	**0.29**	**0.45**	**0.15**	**0.16**
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-6	MW-7	MW-8	MW-9	MW-10
				Client sampling date / time: 07-DEC-2011 15:00	07-DEC-2011 15:00	07-DEC-2011 15:00	08-DEC-2011 15:00	08-DEC-2011 15:00
				EM1114048-006	EM1114048-007	EM1114048-008	EM1114048-009	EM1114048-010
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	----	----	----	<0.01	<0.01
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	----	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**3.13**	**2.32**	**4.21**	**1.27**	**1.45**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**3.13**	**2.32**	**4.21**	**1.27**	**1.45**
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**117**	**122**	**102**	**117**	**119**
Total Cations	----	0.01	meq/L	**107**	**111**	**91.2**	**108**	**106**
Ionic Balance	----	0.01	%	**4.54**	**4.78**	**5.39**	**4.05**	**5.87**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	----	----	<1.0	----
Acenaphthylene	208-96-8	1.0	µg/L	----	----	----	<1.0	----
Acenaphthene	83-32-9	1.0	µg/L	----	----	----	<1.0	----
Fluorene	86-73-7	1.0	µg/L	----	----	----	<1.0	----
Phenanthrene	85-01-8	1.0	µg/L	----	----	----	<1.0	----
Anthracene	120-12-7	1.0	µg/L	----	----	----	<1.0	----
Fluoranthene	206-44-0	1.0	µg/L	----	----	----	<1.0	----
Pyrene	129-00-0	1.0	µg/L	----	----	----	<1.0	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	----	----	<1.0	----
Chrysene	218-01-9	1.0	µg/L	----	----	----	<1.0	----
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	----	----	----	<1.0	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	----	----	<1.0	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	----	----	<1.0	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	----	----	<1.0	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	----	----	<1.0	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	----	<0.5	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	----	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L	----	<50	<50	<50	----
C15 - C28 Fraction	----	100	µg/L	----	<100	<100	<100	----
C29 - C36 Fraction	----	50	µg/L	----	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	----	<50	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft								
C6 - C10 Fraction	----	20	µg/L	----	<20	<20	<20	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-6	MW-7	MW-8	MW-9	MW-10
				Client sampling date / time: 07-DEC-2011 15:00	07-DEC-2011 15:00	07-DEC-2011 15:00	08-DEC-2011 15:00	08-DEC-2011 15:00
				EM1114048-006	EM1114048-007	EM1114048-008	EM1114048-009	EM1114048-010
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft - Continued								
^ **C6 - C10 Fraction minus BTEX (F1)**	----	20	µg/L	----	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L	----	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L	----	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L	----	<100	<100	<100	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L	----	<100	<100	<100	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	----	<1	<1	<1	----
Toluene	108-88-3	2	µg/L	----	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L	----	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L	----	<2	<2	<2	----
^ **Total Xylenes**	1330-20-7	2	µg/L	----	<2	<2	<2	----
^ **Sum of BTEX**	----	1	µg/L	----	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L	----	<5	<5	<5	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	----	----	**29.9**	----
2-Chlorophenol-D4	93951-73-6	0.1	%	----	----	----	**80.2**	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	----	----	**61.2**	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	----	----	**55.4**	----
Anthracene-d10	1719-06-8	0.1	%	----	----	----	**65.7**	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	----	----	**63.2**	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	**102**	**92.3**	**92.2**	----
Toluene-D8	2037-26-5	0.1	%	----	**102**	**95.7**	**99.7**	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	**97.6**	**88.6**	**88.0**	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-11	QW-1-081211	RB-1_071211	RB-2_081211	TB-1_091211
				Client sampling date / time: 08-DEC-2011 15:00	08-DEC-2011 15:00	07-DEC-2011 15:00	08-DEC-2011 15:00	09-DEC-2011 15:00
				EM1114048-011	EM1114048-012	EM1114048-013	EM1114048-014	EM1114048-015
EA010: Conductivity								
Electrical Conductivity @ 25°C	----	1	µS/cm	**10400**	**9770**	----	----	----
EA015: Total Dissolved Solids								
Total Dissolved Solids @180°C	GIS-210-010	5	mg/L	**6060**	**6150**	----	----	----
ED037P: Alkalinity by PC Titrator								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	**225**	**211**	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	**225**	**211**	----	----	----
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	**280**	**274**	----	----	----
ED045G: Chloride Discrete analyser								
Chloride	16887-00-6	1	mg/L	**3880**	**3810**	----	----	----
ED093F: Dissolved Major Cations								
Calcium	7440-70-2	1	mg/L	**398**	**414**	----	----	----
Magnesium	7439-95-4	1	mg/L	**416**	**376**	----	----	----
Sodium	7440-23-5	1	mg/L	**1200**	**1300**	----	----	----
Potassium	7440-09-7	1	mg/L	**18**	**17**	----	----	----
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Barium	7440-39-3	0.001	mg/L	**0.241**	**0.123**	<0.001	<0.001	<0.001
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cobalt	7440-48-4	0.001	mg/L	<0.001	**0.001**	<0.001	<0.001	<0.001
Chromium	7440-47-3	0.001	mg/L	**0.002**	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	**0.003**	**0.006**	<0.001	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	**0.003**	**0.020**	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	**0.008**	**0.098**	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	**0.001**	<0.001	<0.001	<0.001
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	**0.023**	**0.101**	<0.005	<0.005	<0.005
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L	<0.01	**0.01**	<0.01	<0.01	<0.01
Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	7440-42-8	0.05	mg/L	**0.16**	**0.15**	<0.05	<0.05	<0.05
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-11	QW-1-081211	RB-1_071211	RB-2_081211	TB-1_091211
				Client sampling date / time: 08-DEC-2011 15:00	08-DEC-2011 15:00	07-DEC-2011 15:00	08-DEC-2011 15:00	09-DEC-2011 15:00
				EM1114048-011	EM1114048-012	EM1114048-013	EM1114048-014	EM1114048-015
EG050F: Dissolved Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	----	0.01	mg/L	<0.01	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**1.44**	**1.20**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**1.44**	**1.20**	----	----	----
EN055: Ionic Balance								
Total Anions	----	0.01	meq/L	**120**	**117**	----	----	----
Total Cations	----	0.01	meq/L	**107**	**108**	----	----	----
Ionic Balance	----	0.01	%	**5.74**	**3.89**	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	----	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	----	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	----	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L	----	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	----	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L	----	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	----	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L	----	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	----	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L	----	<1.0	----	----	----
Benzo(b)fluoranthene	205-99-2	1.0	µg/L	----	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	----	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	----	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	----	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	----	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	----	<20	----	----	----
C10 - C14 Fraction	----	50	µg/L	----	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L	----	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L	----	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	----	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft								
C6 - C10 Fraction	----	20	µg/L	----	<20	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: MW-11	QW-1-081211	RB-1_071211	RB-2_081211	TB-1_091211
				Client sampling date / time: 08-DEC-2011 15:00	08-DEC-2011 15:00	07-DEC-2011 15:00	08-DEC-2011 15:00	09-DEC-2011 15:00
				EM1114048-011	EM1114048-012	EM1114048-013	EM1114048-014	EM1114048-015
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft - Continued								
^ **C6 - C10 Fraction minus BTEX (F1)**	----	20	µg/L	----	<20	----	----	----
>C10 - C16 Fraction	----	100	µg/L	----	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L	----	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L	----	<100	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L	----	<100	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	----	<1	----	----	----
Toluene	108-88-3	2	µg/L	----	<2	----	----	----
Ethylbenzene	100-41-4	2	µg/L	----	<2	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	----	<2	----	----	----
ortho-Xylene	95-47-6	2	µg/L	----	<2	----	----	----
^ **Total Xylenes**	1330-20-7	2	µg/L	----	<2	----	----	----
^ **Sum of BTEX**	----	1	µg/L	----	<1	----	----	----
Naphthalene	91-20-3	5	µg/L	----	<5	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	**21.5**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	----	**55.8**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	----	**42.3**	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	**52.5**	----	----	----
Anthracene-d10	1719-06-8	0.1	%	----	**62.3**	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	----	**43.6**	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	**95.9**	----	----	----
Toluene-D8	2037-26-5	0.1	%	----	**107**	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	----	**98.9**	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: TB-2_091211	----	----	----	----
				Client sampling date / time: 09-DEC-2011 15:00	----	----	----	----
				EM1114048-016	**----**	**----**	**----**	**----**
EG020F: Dissolved Metals by ICP-MS								
Antimony	7440-36-0	0.001	mg/L	<0.001	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Barium	7440-39-3	0.001	mg/L	<0.001	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----
Tin	7440-31-5	0.001	mg/L	<0.001	----	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	----	----	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	58
2-Chlorophenol-D4	93951-73-6	10	124
2.4.6-Tribromophenol	118-79-6	26	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	32	122
Anthracene-d10	1719-06-8	34	136
4-Terphenyl-d14	1718-51-0	34	140
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	131
Toluene-D8	2037-26-5	72	124
4-Bromofluorobenzene	460-00-4	70	126

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM1114048**	Page	: 1 of 10
Amendment	: **1**		
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Sarah Hodgson
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: sarah.hodgson@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: 03 8549 9652
Facsimile	: +61 03 9593 8555	Facsimile	: 03 8549 9626
Project	: 3106004 WERRIBEE GME #5	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0148-0149	Date Samples Received	: 09-DEC-2011
Sampler	: LD	Issue Date	: 22-DEC-2011
Order number	: 3677		
		No. of samples received	: 16
Quote number	: EN/018/11	No. of samples analysed	: 16

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA010: Conductivity							
Clear Plastic Bottle - Natural MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	**07-DEC-2011**	**----**	----	----	**13-DEC-2011**	04-JAN-2012	✓
Clear Plastic Bottle - Natural MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	**----**	----	----	**13-DEC-2011**	05-JAN-2012	✓
EA015: Total Dissolved Solids							
Clear Plastic Bottle - Natural MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	**07-DEC-2011**	**----**	----	----	**13-DEC-2011**	14-DEC-2011	✓
Clear Plastic Bottle - Natural MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	**----**	----	----	**13-DEC-2011**	15-DEC-2011	✓
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	**07-DEC-2011**	**---**	21-DEC-2011	----	**12-DEC-2011**	21-DEC-2011	✓
Clear Plastic Bottle - Natural MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	**---**	22-DEC-2011	----	**12-DEC-2011**	22-DEC-2011	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural							
MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	**07-DEC-2011**	---	04-JAN-2012	----	**13-DEC-2011**	04-JAN-2012	✓
Clear Plastic Bottle - Natural							
MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	---	05-JAN-2012	----	**13-DEC-2011**	05-JAN-2012	✓
ED045G: Chloride Discrete analyser							
Clear Plastic Bottle - Natural							
MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	**07-DEC-2011**	---	04-JAN-2012	----	**13-DEC-2011**	04-JAN-2012	✓
Clear Plastic Bottle - Natural							
MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	---	05-JAN-2012	----	**13-DEC-2011**	05-JAN-2012	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Natural							
MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	**07-DEC-2011**	---	14-DEC-2011	----	**13-DEC-2011**	14-DEC-2011	✓
Clear Plastic Bottle - Natural							
MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	---	15-DEC-2011	----	**13-DEC-2011**	15-DEC-2011	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered							
MW-1, MW-2, MW-5, MW-6, MW-7, MW-8, RB-1_071211	**07-DEC-2011**	---	04-JUN-2012	----	**15-DEC-2011**	04-JUN-2012	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211, RB-2_081211	**08-DEC-2011**	---	05-JUN-2012	----	**15-DEC-2011**	05-JUN-2012	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
TB-1_091211, TB-2_091211	**09-DEC-2011**	---	06-JUN-2012	----	**15-DEC-2011**	06-JUN-2012	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered							
MW-1, MW-2, MW-5, MW-6, MW-7, MW-8, RB-1_071211	**07-DEC-2011**	---	04-JAN-2012	----	**14-DEC-2011**	04-JAN-2012	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211, RB-2_081211	**08-DEC-2011**	---	05-JAN-2012	----	**14-DEC-2011**	05-JAN-2012	✓
Clear Plastic Bottle - Nitric Acid; Filtered							
TB-1_091211, TB-2_091211	**09-DEC-2011**	---	06-JAN-2012	----	**14-DEC-2011**	06-JAN-2012	✓
EG050F: Dissolved Hexavalent Chromium							
Clear Plastic Bottle - NaOH							
MW-3, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	**----**	----	----	**13-DEC-2011**	05-JAN-2012	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural							
MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	**07-DEC-2011**	---	09-DEC-2011	----	**09-DEC-2011**	09-DEC-2011	✓
Clear Plastic Bottle - Natural							
MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	---	10-DEC-2011	----	**09-DEC-2011**	10-DEC-2011	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Natural							
MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	**07-DEC-2011**	---	09-DEC-2011	----	**13-DEC-2011**	09-DEC-2011	×
Clear Plastic Bottle - Natural							
MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	**08-DEC-2011**	---	10-DEC-2011	----	**13-DEC-2011**	10-DEC-2011	×
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved							
MW-9, QW-1-081211	**08-DEC-2011**	**12-DEC-2011**	15-DEC-2011	✓	**14-DEC-2011**	21-JAN-2012	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved MW-1, MW-5, MW-7, MW-8	**07-DEC-2011**	**12-DEC-2011**	14-DEC-2011	✓	**14-DEC-2011**	21-JAN-2012	✓
Amber Glass Bottle - Unpreserved MW-4, MW-9, QW-1-081211	**08-DEC-2011**	**12-DEC-2011**	15-DEC-2011	✓	**14-DEC-2011**	21-JAN-2012	✓
Amber VOC Vial- NaHSO4 or H2SO4 MW-1, MW-5, MW-7, MW-8	**07-DEC-2011**	**12-DEC-2011**	21-DEC-2011	✓	**15-DEC-2011**	21-DEC-2011	✓
Amber VOC Vial- NaHSO4 or H2SO4 MW-4, MW-9, QW-1-081211	**08-DEC-2011**	**12-DEC-2011**	22-DEC-2011	✓	**15-DEC-2011**	22-DEC-2011	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft							
Amber Glass Bottle - Unpreserved MW-1, MW-5, MW-7, MW-8	**07-DEC-2011**	**12-DEC-2011**	14-DEC-2011	✓	**14-DEC-2011**	21-JAN-2012	✓
Amber Glass Bottle - Unpreserved MW-4, MW-9, QW-1-081211	**08-DEC-2011**	**12-DEC-2011**	15-DEC-2011	✓	**14-DEC-2011**	21-JAN-2012	✓
Amber VOC Vial- NaHSO4 or H2SO4 MW-1, MW-5, MW-7, MW-8	**07-DEC-2011**	**12-DEC-2011**	21-DEC-2011	✓	**15-DEC-2011**	21-DEC-2011	✓
Amber VOC Vial- NaHSO4 or H2SO4 MW-4, MW-9, QW-1-081211	**08-DEC-2011**	**12-DEC-2011**	22-DEC-2011	✓	**15-DEC-2011**	22-DEC-2011	✓
EP080: BTEXN							
Amber VOC Vial- NaHSO4 or H2SO4 MW-1, MW-5, MW-7, MW-8	**07-DEC-2011**	**12-DEC-2011**	21-DEC-2011	✓	**15-DEC-2011**	21-DEC-2011	✓
Amber VOC Vial- NaHSO4 or H2SO4 MW-4, MW-9, QW-1-081211	**08-DEC-2011**	**12-DEC-2011**	22-DEC-2011	✓	**15-DEC-2011**	22-DEC-2011	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Alkalinity by PC Titrator	ED037-P	2	18	**11.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Chloride by Discrete Analyser	ED045G	2	19	**10.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	2	14	**14.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	4	40	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Hexavalent Chromium - Dissolved	EG050F	1	9	**11.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	2	19	**10.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	3	21	**14.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids (High Level)	EA015H	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Alkalinity by PC Titrator	ED037-P	1	18	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Chloride by Discrete Analyser	ED045G	2	19	**10.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	1	14	**7.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	2	40	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Hexavalent Chromium - Dissolved	EG050F	1	9	**11.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	1	19	**5.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	21	**9.5**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids (High Level)	EA015H	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	18	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Chloride by Discrete Analyser	ED045G	1	19	**5.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Conductivity	EA010	1	14	**7.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	2	40	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Hexavalent Chromium - Dissolved	EG050F	1	9	**11.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Major Cations - Dissolved	ED093F	1	19	**5.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	21	**9.5**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	**7.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Dissolved Solids (High Level)	EA015H	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
TPH - Semivolatile Fraction	EP071	1	18	**5.6**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Chloride by Discrete Analyser	ED045G	1	19	**5.3**	**5.0**	✓	ALS QCS3 requirement
Dissolved Mercury by FIMS	EG035F	2	40	**5.0**	**5.0**	✓	ALS QCS3 requirement
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	**5.0**	**5.0**	✓	ALS QCS3 requirement
Hexavalent Chromium - Dissolved	EG050F	1	9	**11.1**	**5.0**	✓	ALS QCS3 requirement
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Nitrite as N by Discrete Analyser	EK057G	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Conductivity	EA010	WATER	APHA 21st ed., 2510 B Conductivity is determined by ISE, either manually or automated measurement. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Dissolved Solids (High Level)	EA015H	WATER	APHA 21st ed., 2540C A gravimetric procedure that determines the amount of `filterable` residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Alkalinity by PC Titrator	ED037-P	WATER	APHA 21st ed., 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	APHA 21st ed., 4500-SO4 Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Chloride by Discrete Analyser	ED045G	WATER	APHA 21st ed., 4500 Cl - G.The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	Major Cations is determined based on APHA 21st ed., 3120; USEPA SW 846 - 6010 The ICPAES technique ionises the 0.45um filtered sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2) Sodium Absorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2) Total Hardness is calculated based on APHA 21st ed., 2340 B. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): Samples are 0.45 um filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45 um filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Hexavalent Chromium - Dissolved	EG050F	WATER	APHA 21st ed., 3500 Cr-B. Samples are 0.45 um filtered prior to analysis. Hexavalent chromium is determined on filtered water sample as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Analytical Methods	Method	Matrix	Method Descriptions
Nitrite as N by Discrete Analyser	EK057G	WATER	APHA 21st ed., 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrate as N by Discrete Analyser	EK058G	WATER	APHA 21st ed., 4500-NO3- F. Nitrate is reduced to nitrite by way of a cadmium reduction column followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	APHA 21st ed., 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Cadmium Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	APHA 21st Ed. 1030F. The Ionic Balance is calculated based on the major Anions and Cations. The major anions include Alkalinity, Chloride and Sulfate which determined by PCT and DA. The Cations are determined by Turbi SO4 by DA. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH - Semivolatile Fraction	EP071	WATER	USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
TPH Volatiles/BTEX	EP080	WATER	USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	USEPA SW 846 - 3510B 500 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2). ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1114037-002	Anonymous	**Sulfate as SO4 - Turbidimetric**	14808-79-8	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser						
Clear Plastic Bottle - Natural MW-1, MW-2, MW-5, MW-6, MW-7, MW-8	----	----	----	13-DEC-2011	09-DEC-2011	**4**
Clear Plastic Bottle - Natural MW-3, MW-4, MW-9, MW-10, MW-11, QW-1-081211	----	----	----	13-DEC-2011	10-DEC-2011	**3**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

QUALITY CONTROL REPORT

Work Order	: **EM1114048**	Page	: 1 of 11
Amendment	: **1**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Sarah Hodgson
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: sarah.hodgson@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: 03 8549 9652
Facsimile	: +61 03 9593 8555	Facsimile	: 03 8549 9626
Project	: 3106004 WERRIBEE GME #5	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: 0148-0149	Date Samples Received	: 09-DEC-2011
Sampler	: LD	Issue Date	: 22-DEC-2011
Order number	: 3677		
		No. of samples received	: 16
Quote number	: EN/018/11	No. of samples analysed	: 16

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics
Emily Yuen	Organic Chemist	Melbourne Organics
Eric Chau	Metals Team Leader	Melbourne Inorganics
Varsha Ho Wing	Non-Metals Team Leader	Melbourne Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA010: Conductivity (QC Lot: 2087195)									
EM1114037-001	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	4920	4920	0.0	0% - 20%
EM1114048-009	MW-9	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	10200	10300	0.5	0% - 20%
EA015: Total Dissolved Solids (QC Lot: 2086457)									
EM1114026-011	Anonymous	EA015H: Total Dissolved Solids @180°C	GIS-210-010	5	mg/L	220	210	4.6	0% - 20%
EM1114048-004	MW-4	EA015H: Total Dissolved Solids @180°C	GIS-210-010	5	mg/L	3780	3690	2.3	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 2085564)									
EM1114048-001	MW-1	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	345	345	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	345	345	0.0	0% - 20%
EM1114048-010	MW-10	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	214	216	0.6	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	214	216	0.6	0% - 20%
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 2085340)									
EM1114035-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	45	46	3.5	0% - 20%
EM1114048-007	MW-7	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	395	396	0.2	0% - 20%
ED045G: Chloride Discrete analyser (QC Lot: 2085342)									
EM1114037-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	1180	1170	0.5	0% - 20%
EM1114048-007	MW-7	ED045G: Chloride	16887-00-6	1	mg/L	3770	3740	1.0	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 2085341)									
EM1114037-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	172	174	1.0	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	60	60	0.0	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	710	714	0.4	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	24	24	0.0	0% - 20%
EM1114048-007	MW-7	ED093F: Calcium	7440-70-2	1	mg/L	371	364	1.8	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	445	435	2.3	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1260	1240	1.6	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	26	26	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2085229)									
EM1114004-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.003	89.2	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2085229) - continued									
EM1114004-004	Anonymous	EG020A-F: Barium	7440-39-3	0.001	mg/L	0.061	0.062	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.021	0.022	5.2	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.314	0.319	1.7	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	0.011	0.011	0.0	0% - 50%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.020	0.018	9.5	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	1.39	1.41	1.3	0% - 20%
EM1114004-021	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0501	0.0510	1.7	0% - 20%
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.123	0.125	1.4	0% - 20%
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.020	0.020	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	1.24	1.26	2.2	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	21.0	21.8	3.4	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	29.4	29.4	0.1	0% - 20%
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	1.29	1.32	2.6	0% - 20%
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	14.0	14.4	2.4	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	1.27	1.28	0.0	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2085231)									
EM1114048-002	MW-2	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.083	0.084	0.0	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.008	0.008	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2085231) - continued									
EM1114048-002	MW-2	EG020A-F: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.010	0.008	18.2	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.043	0.042	0.0	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	0.01	0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.23	0.22	4.6	No Limit
EM1114048-011	MW-11	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.002	0.0	No Limit
		EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Barium	7440-39-3	0.001	mg/L	0.241	0.242	0.6	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.008	0.008	0.0	No Limit
		EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.023	0.018	24.2	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.01	0.0	No Limit
		EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-F: Boron	7440-42-8	0.05	mg/L	0.16	0.17	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2085228)									
EM1114004-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM1114004-021	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	0.0018	0.0011	44.4	0% - 50%
EG035F: Dissolved Mercury by FIMS (QC Lot: 2085230)									
EM1114048-002	MW-2	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM1114048-011	MW-11	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050F: Dissolved Hexavalent Chromium (QC Lot: 2087409)									
EM1114048-003	MW-3	EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 2085338)									
EM1114035-001	Anonymous	EK057G: Nitrite as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EM1114048-007	MW-7	EK057G: Nitrite as N	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2085274)									
EM1113995-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.74	0.73	1.9	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2085274) - continued									
EM1114048-001	MW-1	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	4.23	3.90	8.1	0% - 20%
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2085276)									
EM1114048-012	QW-1-081211	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	1.20	1.23	1.9	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2085400)									
EM1114022-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EM1114022-011	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	10700	8960	17.9	0% - 20%
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QC Lot: 2085400)									
EM1114022-001	Anonymous	EP080: C6 - C10 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EM1114022-011	Anonymous	EP080: C6 - C10 Fraction	----	20	µg/L	12400	10300	18.2	0% - 20%
EP080: BTEXN (QC Lot: 2085400)									
EM1114022-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EM1114022-011	Anonymous	EP080: Benzene	71-43-2	1	µg/L	863	758	12.9	0% - 20%
		EP080: Toluene	108-88-3	2	µg/L	2250	1960	13.8	0% - 20%
		EP080: Ethylbenzene	100-41-4	2	µg/L	732	620	16.5	0% - 20%
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	3610	3330	8.3	0% - 20%
		EP080: ortho-Xylene	95-47-6	2	µg/L	1670	1540	8.5	0% - 20%
		EP080: Naphthalene	91-20-3	5	µg/L	265	250	5.8	0% - 20%

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA010: Conductivity (QCLot: 2087195)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1413 µS/cm	99.9	98	102
EA015: Total Dissolved Solids (QCLot: 2086457)								
EA015H: Total Dissolved Solids @180°C	GIS-210-010	5	mg/L	<5	2000 mg/L	101	98	104
ED037P: Alkalinity by PC Titrator (QCLot: 2085564)								
ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	----	200 mg/L	99.5	77	127
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2085340)								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	12.5 mg/L	107	81	125
ED045G: Chloride Discrete analyser (QCLot: 2085342)								
ED045G: Chloride	16887-00-6	1	mg/L	<1	1000 mg/L	97.0	89	117
ED093F: Dissolved Major Cations (QCLot: 2085341)								
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	101	81	129
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	89.8	80	120
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	95.5	78	124
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	95.3	79	121
EG020F: Dissolved Metals by ICP-MS (QCLot: 2085229)								
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	91.4	80	124
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	87	109
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	103	70	124
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	100	88	110
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	88	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	103	86	112
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	99.0	87	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.5	86	108
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	90	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	87	111
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	97.5	84	108
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	97.6	86	112
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	97.2	83	111
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	102	83	111
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	101	85	113
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	103	86	120
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	99.5	61	133
EG020F: Dissolved Metals by ICP-MS (QCLot: 2085231)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2085231) - continued								
EG020A-F: Antimony	7440-36-0	0.001	mg/L	<0.001	0.1 mg/L	96.2	80	124
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	87	109
EG020A-F: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	97.6	70	124
EG020A-F: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	98.9	88	110
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	103	88	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	86	112
EG020A-F: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	96.7	87	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.3	86	108
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.9	90	110
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	105	87	111
EG020A-F: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	97.0	84	108
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.6	86	112
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	98.3	83	111
EG020A-F: Tin	7440-31-5	0.001	mg/L	<0.001	0.1 mg/L	99.0	83	111
EG020A-F: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	100	85	113
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	86	120
EG020A-F: Boron	7440-42-8	0.05	mg/L	<0.05	0.1 mg/L	101	61	133
EG035F: Dissolved Mercury by FIMS (QCLot: 2085228)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	96.5	71	125
EG035F: Dissolved Mercury by FIMS (QCLot: 2085230)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	98.9	71	125
EG050F: Dissolved Hexavalent Chromium (QCLot: 2087409)								
EG050F: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	96.0	80	120
EK057G: Nitrite as N by Discrete Analyser (QCLot: 2085338)								
EK057G: Nitrite as N	----	0.01	mg/L	<0.01	0.5 mg/L	103	84	112
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2085274)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	94.6	73	127
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2085276)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	81.6	73	127
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2085266)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	45.0	27.5	124
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	35.4	35	129
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	48.0	35	127
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	47.3	36	130
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	47.9	42	132
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	46.1	42	132
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	51.6	41	141
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	40.5	40	142

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2085266) - continued								
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	51.2	33	153
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	70.0	37	145
EP075(SIM): Benzo(b)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	69.4	35	151
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	67.8	39	141
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	58.5	41	139
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	66.7	35	141
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	76.9	36	142
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	66.6	10	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2085265)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2585 µg/L	69.5	64	124
EP071: C15 - C28 Fraction	----	100	µg/L	<100	9720 µg/L	76.3	70	130
EP071: C29 - C36 Fraction	----	50	µg/L	<50	3340 µg/L	80.9	68	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2085400)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	320 µg/L	99.0	72	136
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2085265)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	4055 µg/L	72.4	70	130
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	10355 µg/L	82.7	70	130
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	890 µg/L	80.0	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2085400)								
EP080: C6 - C10 Fraction	----	20	µg/L	<20	370 µg/L	96.9	70	130
EP080: BTEXN (QCLot: 2085400)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	102	73	127
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	109	74	128
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	102	72	126
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	101	69	133
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	102	74	128
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	112	70	130

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 2085340)							
EM1114037-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
ED045G: Chloride Discrete analyser (QCLot: 2085342)							
EM1114037-002	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	91.2	70	130
EG020F: Dissolved Metals by ICP-MS (QCLot: 2085229)							
EM1114004-004	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	110	89	139
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	113	64	138
		EG020A-F: Barium	7440-39-3	0.2 mg/L	114	80	122
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	112	75	131
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	107	70	130
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	110	77	129
		EG020A-F: Copper	7440-50-8	0.2 mg/L	100	71	127
		EG020A-F: Lead	7439-92-1	0.2 mg/L	115	71	123
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	120	66	132
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	109	73	129
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	111	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	102	68	136
EG020F: Dissolved Metals by ICP-MS (QCLot: 2085231)							
EM1114048-002	MW-2	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	115	89	139
		EG020A-F: Beryllium	7440-41-7	0.2 mg/L	112	64	138
		EG020A-F: Barium	7440-39-3	0.2 mg/L	113	80	122
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	113	75	131
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	110	70	130
		EG020A-F: Cobalt	7440-48-4	0.2 mg/L	113	77	129
		EG020A-F: Copper	7440-50-8	0.2 mg/L	108	71	127
		EG020A-F: Lead	7439-92-1	0.2 mg/L	111	71	123
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	109	66	132
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	106	73	129
		EG020A-F: Vanadium	7440-62-2	0.2 mg/L	109	70	130
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	121	68	136
EG035F: Dissolved Mercury by FIMS (QCLot: 2085228)							
EM1114004-007	Anonymous	EG035F: Mercury	7439-97-6	0.0100 mg/L	87.2	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 2085230)							
EM1114048-003	MW-3	EG035F: Mercury	7439-97-6	0.0100 mg/L	96.6	70	130
EG050F: Dissolved Hexavalent Chromium (QCLot: 2087409)							

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG050F: Dissolved Hexavalent Chromium (QCLot: 2087409) - continued							
EM1114048-009	MW-9	EG050F: Hexavalent Chromium	18540-29-9	0.5 mg/L	102	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 2085338)							
EM1114084-003	Anonymous	EK057G: Nitrite as N	----	0.5 mg/L	118	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2085274)							
EM1113995-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	124	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2085400)							
EM1114022-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	89.0	51	125
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2085400)							
EM1114022-002	Anonymous	EP080: C6 - C10 Fraction	----	330 µg/L	88.5	70	130
EP080: BTEXN (QCLot: 2085400)							
EM1114022-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	98.0	63	131
		EP080: Toluene	108-88-3	20 µg/L	102	65	133

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive Report

Work Order	: **EM1114048**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR LUKE DAL LAGO	Contact	: Sarah Hodgson
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: ldallago@otek.com.au	E-mail	: sarah.hodgson@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: 03 8549 9652
Facsimile	: +61 03 9593 8555	Facsimile	: 03 8549 9626
Project	: 3106004 WERRIBEE GME #5	Page	: 1 of 4
Order number	: 3677		
C-O-C number	: 0148-0149	Quote number	: EM2011OTEK0308 (EN/018/11)
Site	: ----		
Sampler	: LD	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Dates

Date Samples Received	: 09-DEC-2011	Issue Date	: 12-DEC-2011 12:05
Client Requested Due Date	: 19-DEC-2011	Scheduled Reporting Date	: **19-DEC-2011**

Delivery Details

Mode of Delivery	: Carrier	Temperature	: 3.0-3.5 - Ice present
No. of coolers/boxes	: 2	No. of samples received	: 16
Security Seal	: Intact.	No. of samples analysed	: 16

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Samples received in appropriately pretreated and preserved containers.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALS Melbourne.**
- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exist.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default to 15:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory for processing purposes and will be shown bracketed without a time component.

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - EA010 Conductivity	WATER - EA015H Total Dissolved Solids - High Level	WATER - EG020F Dissolved Metals by ICPMS	WATER - EG050F Dissolved Hexavalent Chromium	WATER - EN055 - PG Ionic Balance by ED037P, ED041G, ED045G & ED093F)	WATER - NT-01 Major Cations (Ca, Mg, Na, K)	WATER - NT-02 Major Anions (Chloride, Sulphate, Alkalinity)	WATER - NT-04 Nitrite and Nitrate
EM1114048-001	07-DEC-2011 15:00	MW-1	✓	✓	✓		✓	✓	✓	✓
EM1114048-002	07-DEC-2011 15:00	MW-2	✓	✓	✓		✓	✓	✓	✓
EM1114048-003	08-DEC-2011 15:00	MW-3	✓	✓	✓	✓	✓	✓	✓	✓
EM1114048-004	08-DEC-2011 15:00	MW-4	✓	✓	✓		✓	✓	✓	✓
EM1114048-005	07-DEC-2011 15:00	MW-5	✓	✓	✓		✓	✓	✓	✓
EM1114048-006	07-DEC-2011 15:00	MW-6	✓	✓	✓		✓	✓	✓	✓
EM1114048-007	07-DEC-2011 15:00	MW-7	✓	✓	✓		✓	✓	✓	✓
EM1114048-008	07-DEC-2011 15:00	MW-8	✓	✓	✓		✓	✓	✓	✓
EM1114048-009	08-DEC-2011 15:00	MW-9	✓	✓	✓	✓	✓	✓	✓	✓
EM1114048-010	08-DEC-2011 15:00	MW-10	✓	✓	✓	✓	✓	✓	✓	✓
EM1114048-011	08-DEC-2011 15:00	MW-11	✓	✓	✓	✓	✓	✓	✓	✓
EM1114048-012	08-DEC-2011 15:00	QW-1-081211	✓	✓	✓	✓	✓	✓	✓	✓
EM1114048-013	07-DEC-2011 15:00	RB-1_071211			✓					
EM1114048-014	08-DEC-2011 15:00	RB-2_081211			✓					
EM1114048-015	09-DEC-2011 15:00	TB-1_091211			✓					
EM1114048-016	09-DEC-2011 15:00	TB-2_091211			✓					

Matrix: **WATER**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	WATER - W-03 13 Metals (NEPM Suite)	WATER - W-04 TPH/BTEX	WATER - W-07 TPH/BTEX/PAH
EM1114048-001	07-DEC-2011 15:00	MW-1	✓	✓	
EM1114048-002	07-DEC-2011 15:00	MW-2	✓		
EM1114048-003	08-DEC-2011 15:00	MW-3	✓		
EM1114048-004	08-DEC-2011 15:00	MW-4	✓	✓	
EM1114048-005	07-DEC-2011 15:00	MW-5	✓	✓	
EM1114048-006	07-DEC-2011 15:00	MW-6	✓		
EM1114048-007	07-DEC-2011 15:00	MW-7	✓	✓	
EM1114048-008	07-DEC-2011 15:00	MW-8	✓	✓	

			WATER - W-03 13 Metals (NEPM Suite)	WATER - W-04 TPH/BTEX	WATER - W-07 TPH/BTEX/PAH
EM1114048-009	08-DEC-2011 15:00	MW-9	✓		✓
EM1114048-010	08-DEC-2011 15:00	MW-10	✓		
EM1114048-011	08-DEC-2011 15:00	MW-11	✓		
EM1114048-012	08-DEC-2011 15:00	QW-1-081211	✓		✓
EM1114048-013	07-DEC-2011 15:00	RB-1_071211	✓		
EM1114048-014	08-DEC-2011 15:00	RB-2_081211	✓		
EM1114048-015	09-DEC-2011 15:00	TB-1_091211	✓		
EM1114048-016	09-DEC-2011 15:00	TB-2_091211	✓		

Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method		Due for extraction	Due for analysis	Samples Received		Instructions Received	
Client Sample ID(s)	Container			Date	Evaluation	Date	Evaluation
EK057G: Nitrite as N by Discrete Analyser							
MW-1	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-10	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-11	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-2	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-3	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-4	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-5	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-6	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-7	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-8	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-9	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
QW-1-081211	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
EK059G: Nitrite and Nitrate as N (NOx) by Discrete Analyser							
MW-1	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-10	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-11	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-2	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-3	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-4	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-5	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-6	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-7	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-8	Clear Plastic Bottle - Natural	09-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
MW-9	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×
QW-1-081211	Clear Plastic Bottle - Natural	10-DEC-2011	----	09-DEC-2011	✓	12-DEC-2011	×

Requested Deliverables

MR KAYNE BEGBIE

- *AU Certificate of Analysis - NATA	Email	kbegbie@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	kbegbie@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA	Email	kbegbie@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental HT	Email	kbegbie@otek.com.au
- A4 - AU Tax Invoice	Email	kbegbie@otek.com.au
- Chain of Custody (CoC)	Email	kbegbie@otek.com.au
- EDI Format - ENMRG	Email	kbegbie@otek.com.au
- EDI Format - ESDAT	Email	kbegbie@otek.com.au

MR LUKE DAL LAGO

- *AU Certificate of Analysis - NATA (COA)	Email	ldallago@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ldallago@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ldallago@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ldallago@otek.com.au
- A4 - AU Tax Invoice (INV)	Email	ldallago@otek.com.au
- Chain of Custody (CoC) (COC)	Email	ldallago@otek.com.au
- EDI Format - ENMRG (ENMRG)	Email	ldallago@otek.com.au
- EDI Format - ESDAT (ESDAT)	Email	ldallago@otek.com.au

RESULTS/INVOICE

- *AU Certificate of Analysis - NATA	Email	vicreception@otek.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep)	Email	vicreception@otek.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA	Email	vicreception@otek.com.au
- A4 - AU Sample Receipt Notification - Environmental HT	Email	vicreception@otek.com.au
- A4 - AU Tax Invoice	Email	vicreception@otek.com.au
- Chain of Custody (CoC)	Email	vicreception@otek.com.au
- EDI Format - ENMRG	Email	vicreception@otek.com.au
- EDI Format - ESDAT	Email	vicreception@otek.com.au

SCANNED

COC NUMBER:

LAB ALS
ADDRESS 4 WESTALL RD, SPRINGVALE
LAB CONTACT SARAH HODGSON
PHONE

Page 1 of 2

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
ldallago → @otek.com.au
kbegbie →

PROJECT # 3106004

PROJECT NAME WERRIBEE GME #5

COLLECTORS NAME LTD

LAB JOB #

PRELIM. RESULTS BY:

FAX ☐ EMAIL ☑

FINAL REPORT BY: 1 week

LAB QUOTE REF: EN-018-10

OTEK PO No.: 3677

REMARKS

SAMPLES SENT TO LAB MICRO NITRATE FERROUS OTHER ADH 9/12/11

	SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: METALS (18)	BTEX + TPH C6-36	TDS, EC	Nitrate, Nitrite	Alkalinity, Sulphate	TOTAL ANIONS TOTAL CATIONS	CHLORIDE	Ca, Mg, Na, K	PAH	Cr 6+			
	DISCRETE SAMPLE REQUEST:																						
1	MW-1	—		W	X	✓			7.12.11		X	X	X	X	X	X	X	X					
2	MW-2	—		W	X	✓			8.12.11		X		X	X	X	X	✓	X					
3	MW-3	—		W	X	✓			8.12.11		X		✓	X	X	X	X	✓		X			
4	MW-4	—		W	X	✓			8.12.11		X	X	X	X	X	X	X	X					
5	MW-5	—		W	X	✓			7.12.11		X	X	X	X	X	X	X	X					
6	MW-6	—		W	X	✓			7.12.11		X		X	X	X	X	X	✓					
7	MW-7	—		W	X	✓			7.12.11		X	X	X	X	X	X	X	X					
8	MW-8	—		W	X	✓			8.12.11		X	X	X	X	X	X	X	X		✓	as per email D. & 09/12		
9	MW-9	—		W	X	✓			8.12.11		X	X	X	✓	X	X	X	X	X	X			
10	MW-10	—		W	X	✓			8.12.11		X		✓	X	X	X	X	X	X	X			
11	MW-11	—		W	X	✓			8.12.11		X		✓	X	X	X	X	X		X			

Environmental Division
Melbourne
Work Order
EM1114048

Telephone : +61-3-8549 9600

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) LUKE DALLAGO (Signature)

Date 9.12.11

Relinquished by:	Date	Time	Received by:	Date	Time
	9.12.11	8:30			
Relinquished by:	Date	Time	Received by: Raymond	Date 9/12/11	Time 9:45
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact? (Yes) / No / NA

Samples Received Chilled? (Yes) / No

Additional Comments:

Please provide electronic results in ESDAT format

COC NUMBER: 0149

LAB ACS
ADDRESS 4 WESTALL RD, SPRINGVALE
LAB CONTACT
PHONE

Page 2 of 2

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
Idallago → @otek.com.au
Rbegbie ↓

OTEK AUSTRALIA PTY LTD

PROJECT # 3106004
PROJECT NAME WERRIBEE GME#5
COLLECTORS NAME CTD
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL
FINAL REPORT BY: 1 week
LAB QUOTE REF: EN-018-10
OTEK PO No.: 3677

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: METALS (18)	BTEX TPH C6-36	TDS, EC	Nitrate, Nitrite	Alkalinity, Sulphate	TOTAL ANIONS	CHLORIDE	Ca Mg Na, K	PAH	Cr 6+	REMARKS
DISCRETE SAMPLE REQUEST:																				
QW-1_081211	–	12	W	X	X			8.12.11		X	X	X	X	X	X	X	X	X	X	
QW-1A_081211	–		W	X	X			8.12.11		X	X	X	X	X	X	X	X	X	X	→ Please forward to Groundswell South melbourne 116 Moray St South melbourne
RB-1_081211	–	13	W	X	X			7.12.11		X										
RB-2_081211	–	14	W	X	X			8.12.11		X										
TB-1_091211	–	15	W	X	X			9.12.11		X										
TB-2_091211	–	16	W	X	X			7.12.11		X										
RB-071211																				
RB-0A1211																				
* sample id's to be reported as per Luke. SC 12/12.																				
Secondary laboratory.																				

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) CRAIG DALLAGO (Signature) Date

Relinquished by:	Date	Time	Received by:	Date	Time
	9.12.11	8:30		9-12-11	
Relinquished by:	Date	Time	Received by: Raymond	Date 9/12/11	Time 9:45
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact? (Yes) / No / NA

Samples Received Chilled? (Yes) / No

Additional Comments:

Please provide electronic results in ESDAT format

Sarah Cordell

From: Luke Dallago [LDallago@otek.com.au]
Sent: Monday, 12 December 2011 8:56 AM
To: Sarah Cordell
Subject: RE: WERRIBEE PROJECT, WO EM1114048
Follow Up Flag: Follow up
Flag Status: Red

Hi Sarah,

Sorry for the confusion.

The 18 metals should be - Sb, As, Ba, Be, B, Cd, Cr, Co, Cu, Hg, Pb, Mn, Mo, Ni, Se, Sn, V, Zn

The COC is correct with respect to the Cr6+ analysis for MW-3 so the bottle is labelled incorrectly and should be MW-3 not MW-4.

The trip blank bottles were prepared by the lab and should be labelled TB-1_091211 and TB-2_091211 both dated the 9/12/11

I also took rinsate blank samples for metals and they should be labelled RB_071211 and RB_081211 dated 7/12/11 and 8/12/11 respectively.

Have you located all 4 metals bottles? – 2 for trip blanks and 2 for rinsate blanks?

Please contact me on 0408704278 if you have any issues with the blanks.

Thanks and sorry again for the confusion

Luke

OTEK_logo_20(

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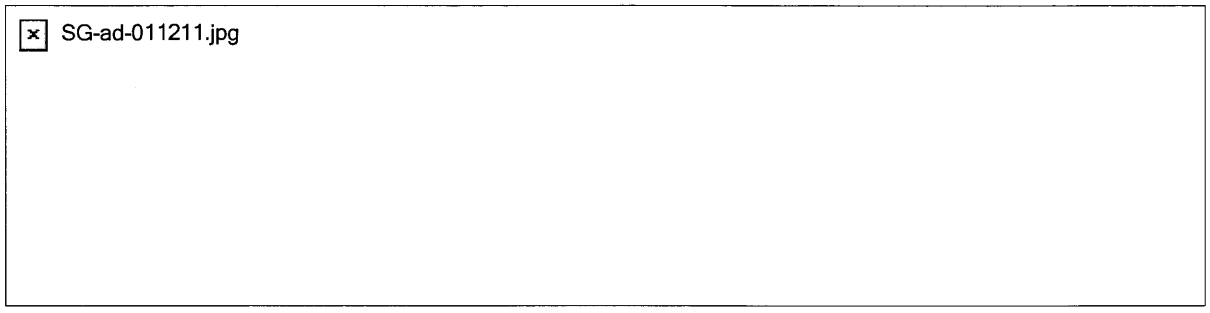
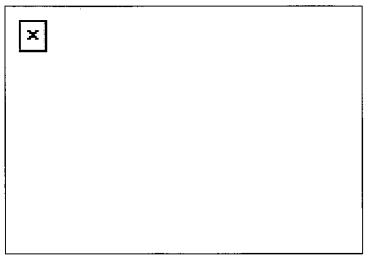


From: Sarah Cordell [mailto:Sarah.Cordell@alsglobal.com]
Sent: Friday, 9 December 2011 6:13 PM
To: Luke Dallago
Cc: Sarah Hodgson
Subject: WERRIBEE PROJECT, WO EM1114048

Hi Luke,
I've amended the COC for PAH analysis as per you request to Sarah Hodgson however I wanted to check a few other details with you regarding this project. Metals analysis requests 18 metals, can you please specify which 18? Also sample MW-3 has been requested for Cr VI analysis however we have not received a hexachrome bottle for MW-3, we have for sample MW-4. Should this analysis be swapped? Lastly, the tripblank samples we have received are labelled as RB_071211 and RB_081211 rather than TB-1_091211 and TB-2_091211. Can I please get confirmation of the sample dates for these tripblank samples (they are dated the 9th rather than the 7th/8th respectively)?

Regards

Sarah Cordell
WORK ORDER CREATION/LOGIN OFFICER



ALS | Environmental (General Environmental Group)

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Winner of the inaugural CARE Award 2011 – Sustainable Technology & Innovation:
Reduction in Sample Volumes – Improving quality, safety, efficiency and sustainability in environmental practices

DATA VALIDATION REPORT

Project Name:	Werribee Hydrogeological Assessment	**Validation Conducted by:**	RMF
Project Number:	3106004	**Signed & Dated:**	17/02/2010
Address:	New Farm Road Werribee		

Primary Laboratory:	ALS	**Secondary Laboratory:**	Labmark	**Sample Matrix:** (Shade)
Batch Number:	EM0912070	**Batch Number:**	09ENME0044068	**Soil**
				Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
8	1	1	3

Have the Following Criteria Been Met? (Shade)

Explain any Discrepancies:

Blind Replicate	**OK if >5%** 12.5	**NOT OK if <5%**	
Split Sample	**OK if >5%** 12.5	**NOT OK if <5%**	
Blank Samples	**OK** 3	**NOT OK**	

2	Rinsate
0	Field
1	Trip

Refer to OTEK QA/QC results table

	Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	1	**Number obtained**	**1**	
	A4/QS-1	**Sample Identification**	A4/QS-1A	
A	133	**Total Number of Analytes**	119	**B**
	0	**No. of analytes with RPD >50% (Fail)**	4	
	133	**Number of analytes <50% (Pass)**	115	
	100.0	**% Pass**	96.6	

Explain any Discrepancies:

A4/QS-1A - 4 exceedences for Arsenic, Total Chromium, Selenium and Nitrate as N, with RPD's of >100%, >186%, >123% and 101% respectively.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	1		2
Sample Identifictaion	A4/TB-2		A4/RB-2, A4/RB-3
Number of Analytes	18		36
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	12	13
	No. Fails	0	0
Analysis	**No. Passes**	55	13
	No. Fails	3	0

Explain any Discrepancies:

A4/MW-1 - 8 breached ALS holding times by 4-6 days for pH analysis.

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

DATA VALIDATION REPORT

Project Name: Werribee Hydrogeological Assessment

Validation Conducted by: RMF

Section 3: **Laboratory Data Quality - Refer to Quality Control Report**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	193	0
# samples RPD >50% **(FAIL)**	2	0
% Pass	99	-

Laboratory Duplicate RPDs

OK (>95%)	99
NOT OK (<95%)	

Explanation for Failures:

No data provided from Labmark.

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	188	138
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	190	86
# analytes outside range i.e <70% or >130% **(FAIL)**	9	5
% Pass	95	94

Surrogates

OK (>95%)	95
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	37	0
# Analytes outside range i.e <70% or >130%	1	0
% Pass	97	-

Internal Spikes

OK (>95%)	97
NOT OK (<95%)	

Explanation for Failures:

No data provided from Labmark.

FINAL DATA

	Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
A	Primary Duplicates	0	133	100.0
B	Secondary Duplicates	4	119	96.6
C	Trip Blanks	0	18	100.0
D	Field Blanks	0	0	-
E	Rinsate Blanks	0	36	100.0
F & G	Lab Internal Duplicates	2	193	99.0
H & I	Lab Method Blanks	0	326	100.0
J & K	Lab Internal Spike Recoveries	14	276	95.0
L & M	Laboratory Spike Recoveries	1	37	97.3
	Total	**21**	**1138**	**98.2**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

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Accreditation Number: 1645

LabMark
ENVIRONMENTAL LABORATORIES

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: Tom Santwyk-Anderson

Project	**09ENME0044068**
Client Reference	3106004/1001
	Area 4 GME
Order Number	0780
Received Date	30/11/2009 12:00:00 AM

Customer Sample ID	**A1/QS-1A**
Sample Matrix	**WATER**
Labmark Sample No.	**1847008**
Date Sampled	**25/11/2009**

VOC

Test/Reference	PQL	Unit	
1300 VOCs in Water by P&T			
Pentafluorobenzene-Surrogate	1	%	79
Toluene-D8 - Surrogate	1	%	77
4-Bromofluorobenzene - Surrogate	1	%	87
Dichlorodifluoromethane	5	µg/L	<5.0
Chloromethane	5	µg/L	<5.0
Vinyl chloride	5	µg/L	<5.0
Bromomethane	5	µg/L	<5.0
Chloroethane	5	µg/L	<5.0
Trichlorofluoromethane	5	µg/L	<5.0
1,1-Dichloroethene	5	µg/L	<5.0
Methylene Chloride	10	µg/L	<10.0
trans-1,2-Dichloroethene	5	µg/L	<5.0
1,1-Dichloroethane	30	µg/L	<30.0
2-butanone	50	µg/L	<50.0
cis-1,2-Dichloroethene	5	µg/L	<5.0
Bromochloromethane	5	µg/L	<5.0
Chloroform	10	µg/L	<10.0
2,2-Dichloropropane	30	µg/L	<30.0
1,2-Dichloroethane	5	µg/L	<5.0
1,1,1-Trichloroethane	5	µg/L	<5.0
1,1-Dichloropropylene	5	µg/L	<5.0
Carbon Tetrachloride	5	µg/L	<5.0
Benzene	0.5	µg/L	<0.5
Dibromomethane	5	µg/L	<5.0
1,2-Dichloropropane	5	µg/L	<5.0
Trichloroethene	5	µg/L	<5.0
Bromodichloromethane	5	µg/L	<5.0
cis-1,3-Dichloropropene	5	µg/L	<5.0
4-methyl-2-pentanone	50	µg/L	<50.0
trans-1,3-Dichloropropene	5	µg/L	<5.0
1,1,2-Trichloroethane	5	µg/L	<5.0
Toluene	1	µg/L	<1.0
1,3-Dichloropropane	5	µg/L	<5.0

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) ROD FOUNTAIN
SIGNATURE
DATE 12/2/10

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Accredited for compliance with ISO/IEC 17025

Accreditation Number: 1645

LabMark ENVIRONMENTAL LABORATORIES

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: Tom Santwyk-Anderson

Project	**09ENME0044068**
Client Reference	3106004/1001
	Area 4 GME
Order Number	0780
Received Date	30/11/2009 12:00:00 AM

Customer Sample ID	**A1/QS-1A**
Sample Matrix	**WATER**
Labmark Sample No.	**1847008**
Date Sampled	**25/11/2009**

VOC

Test/Reference	PQL	Unit	
1300 VOCs in Water by P&T			
Pentafluorobenzene-Surrogate	1	%	79
Toluene-D8 - Surrogate	1	%	77
4-Bromofluorobenzene - Surrogate	1	%	87
Dichlorodifluoromethane	5	µg/L	<5.0
Chloromethane	5	µg/L	<5.0
Vinyl chloride	5	µg/L	<5.0
Bromomethane	5	µg/L	<5.0
Chloroethane	5	µg/L	<5.0
Trichlorofluoromethane	5	µg/L	<5.0
1,1-Dichloroethene	5	µg/L	<5.0
Methylene Chloride	10	µg/L	<10.0
trans-1,2-Dichloroethene	5	µg/L	<5.0
1,1-Dichloroethane	30	µg/L	<30.0
2-butanone	50	µg/L	<50.0
cis-1,2-Dichloroethene	5	µg/L	<5.0
Bromochloromethane	5	µg/L	<5.0
Chloroform	10	µg/L	<10.0
2,2-Dichloropropane	30	µg/L	<30.0
1,2-Dichloroethane	5	µg/L	<5.0
1,1,1-Trichloroethane	5	µg/L	<5.0
1,1-Dichloropropylene	5	µg/L	<5.0
Carbon Tetrachloride	5	µg/L	<5.0
Benzene	0.5	µg/L	<0.5
Dibromomethane	5	µg/L	<5.0
1,2-Dichloropropane	5	µg/L	<5.0
Trichloroethene	5	µg/L	<5.0
Bromodichloromethane	5	µg/L	<5.0
cis-1,3-Dichloropropene	5	µg/L	<5.0
4-methyl-2-pentanone	50	µg/L	<50.0
trans-1,3-Dichloropropene	5	µg/L	<5.0
1,1,2-Trichloroethane	5	µg/L	<5.0
Toluene	1	µg/L	<1.0
1,3-Dichloropropane	5	µg/L	<5.0

Customer Sample ID	**A1/QS-1A**
Sample Matrix	**WATER**
Labmark Sample No.	**1847008**
Date Sampled	**25/11/2009**

VOC

Test/Reference	PQL	Unit	
Dibromochloromethane	5	µg/L	<5.0
1,2-Dibromoethane	5	µg/L	<5.0
Tetrachloroethene	5	µg/L	<5.0
1,1,1,2-Tetrachloroethane	5	µg/L	<5.0
Chlorobenzene	5	µg/L	<5.0
Ethylbenzene	1	µg/L	<1.0
Meta- & Para- Xylene	2	µg/L	<2.0
Bromoform	5	µg/L	<5.0
Styrene	5	µg/L	<5.0
1,1,2,2-Tetrachloroethane	5	µg/L	<5.0
Ortho-Xylene	1	µg/L	<1.0
1,2,3-Trichloropropane	5	µg/L	<5.0
Isopropylbenzene	5	µg/L	<5.0
Bromobenzene	5	µg/L	<5.0
n-Propylbenzene	5	µg/L	<5.0
2-Chlorotoluene	5	µg/L	<5.0
4-Chlorotoluene	5	µg/L	<5.0
1,3,5-Trimethylbenzene	5	µg/L	<5.0
Pentachloroethane	5	µg/L	<5.0
tert-Butylbenzene	5	µg/L	<5.0
1,2,4-Trimethylbenzene	5	µg/L	<5.0
sec-Butylbenzene	5	µg/L	<5.0
1,3-Dichlorobenzene	5	µg/L	<5.0
1,4-Dichlorobenzene	5	µg/L	<5.0
p-Isopropyltoluene	5	µg/L	<5.0
1,2-Dichlorobenzene	5	µg/L	<5.0
n-Butylbenzene	5	µg/L	<5.0
1,2-Dibromo-3-chloropropane	5	µg/L	<5.0
Hexachloroethane	5	µg/L	<5.0
1,2,4-Trichlorobenzene	5	µg/L	<5.0
Naphthalene	5	µg/L	<5.0
Hexachlorobutadiene	5	µg/L	<5.0
1,2,3-Trichlorobenzene	5	µg/L	<5.0
Total Xylenes	3	µg/L	<3.0
1100 BTEX & (C6-C9) in Water by P&T			
4-Bromofluorobenzene - Surrogate	-	%	77
Benzene	0.5	µg/L	<0.5
Toluene	1	µg/L	<1.0
Ethylbenzene	1	µg/L	<1.0
Meta- & Para- Xylene	2	µg/L	<2.0
Ortho-Xylene	1	µg/L	<1.0
Total Xylenes	3	µg/L	<3.0
C6-C9 Fraction	20	µg/L	<20.0

SVOC

Test/Reference	PQL	Unit	
2100 PAH in Water by GC			
Acenaphthene	1	µg/L	<1.0
Acenaphthylene	1	µg/L	<1.0
Anthracene	1	µg/L	<1.0

Customer Sample ID	**A1/QS-1A**
Sample Matrix	**WATER**
Labmark Sample No.	**1847008**
Date Sampled	**25/11/2009**

SVOC

Test/Reference	PQL	Unit	
Benz(a)anthracene	1	µg/L	<1.0
Benzo(a)pyrene	1	µg/L	<1.0
Benzo(b)&(k)fluoranthene	2	µg/L	<2.0
Benzo(ghi)perylene	1	µg/L	<1.0
Dibenz(ah)anthracene	1	µg/L	<1.0
Chrysene	1	µg/L	<1.0
Naphthalene	1	µg/L	<1.0
Fluoranthene	1	µg/L	<1.0
Fluorene	1	µg/L	<1.0
Indeno(123-cd)pyrene	1	µg/L	<1.0
Phenanthrene	1	µg/L	<1.0
Pyrene	1	µg/L	<1.0
Sum of PAHs	1	µg/L	<1
2-Fluorobiphenyl - Surrogate	-	%	99
Anthracene-D10 - Surrogate	-	%	73
p-Terphenyl-D14 - Surrogate	-	%	87
2800 Individual Phenols in Water by GC			
2,3,4,6-Tetrachlorophenol	10	µg/L	<10
2,3,4-Trichlorophenol	10	µg/L	<10
2,3,5,6-Tetrachlorophenol	10	µg/L	<10
2,3,5-Trichlorophenol	10	µg/L	<10
2,3,6-Trichlorophenol	10	µg/L	<10
2,3-Dichlorophenol	20	µg/L	<20
2,4&2,5-Dichlorophenol	40	µg/L	<40
2,4,6-Trichlorophenol	10	µg/L	<10
2,6-Dichlorophenol	10	µg/L	<10
2-Chlorophenol	10	µg/L	<10
2-Methylphenol	10	µg/L	<10
3,4-Dichlorophenol	20	µg/L	<20
3,5-Dichlorophenol	20	µg/L	<20
3-Chlorophenol & 4-Chlorophenol	10	µg/L	<10
3-Methylphenol & 4-Methylphenol	10	µg/L	<10
4-Chloro-3-methylphenol	10	µg/L	<10
Pentachlorophenol	30	µg/L	<30
Phenol	10	µg/L	<10
2,4,6-Tribromophenol-Surrogate	-	%	81
2000 TPH (C10 - C36) in Water by GC			
C10-C14 Fraction	40	µg/L	<40
C15-C28 Fraction	100	µg/L	299
C29-C36 Fraction	100	µg/L	<100

Metals

Test/Reference	PQL	Unit	
3200 Dissolved Metals in Water - ICP/AES			
Calcium	100	µg/L	189000
Iron	100	µg/L	<100
Magnesium	100	µg/L	168000
Potassium	1000	µg/L	23600
Sodium	100	µg/L	1320000
3100 Dissolved Metals in Water By ICP/MS			

Customer Sample ID			**A1/QS-1A**
Sample Matrix			**WATER**
Labmark Sample No.			**1847008**
Date Sampled			**25/11/2009**

Metals

Test/Reference	PQL	Unit	
Antimony	5	µg/L	<5
Arsenic	5	µg/L	10
Barium	5	µg/L	370
Beryllium	5	µg/L	<5
Boron	5	µg/L	460
Cadmium	5	µg/L	<5
Chromium	5	µg/L	27
Cobalt	5	µg/L	5.7
Copper	5	µg/L	<5
Lead	5	µg/L	<5
Manganese	5	µg/L	750
Molybdenum	5	µg/L	6.3
Nickel	5	µg/L	31
Selenium	5	µg/L	42
Silver	5	µg/L	<5
Tin	5	µg/L	<5
Vanadium	5	µg/L	<5
Zinc	5	µg/L	11
3400 Dissolved Mercury in Water by FIMS			
Mercury	0.1	µg/L	<0.1

Inorganics

Test/Reference	PQL	Unit	
4550 Alkalinity in Water			
Total Alkalinity as CaCO3	20	mg/L	352
Bicarbonate as CaCO3	10	mg/L	352
Carbonate as CaCO3	10	mg/L	<10
Hydroxide as CaCO3	10	mg/L	<10
4010 Conductivity in Water			
Electrical Conductivity	20	µS/cm	7360
4000 pH in Water			
pH	0.1	pH	7.7
4110 Dissolved Solids in Water			
Total Dissolved Solids	20	mg/L	4600
4300 Anions in Water by IC			
Chloride	0.5	mg/L	2100
Bromide	0.5	mg/L	5.4
Fluoride	0.5	mg/L	0.7
Nitrate	0.5	mg/L	I03 4.0
Nitrite	0.5	mg/L	<0.5
Orthophosphate	0.5	mg/L	<0.5
Sulphate	0.5	mg/L	280

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
1100 BTEX & (C6-C9) in Water by P&T	Melbourne 1645	01/12/2009	02/12/2009
1300 VOCs in Water by P&T	Melbourne 1645	01/12/2009	04/12/2009
2000 TPH (C10 - C36) in Water by GC	Melbourne 1645	02/12/2009	03/12/2009
2100 PAH in Water by GC	Melbourne 1645	02/12/2009	03/12/2009
2800 Individual Phenols in Water by GC	Melbourne 1645	02/12/2009	03/12/2009
3100 Dissolved Metals in Water By ICP/MS	Melbourne 1645	01/12/2009	02/12/2009
3200 Dissolved Metals in Water - ICP/AES	Melbourne 1645	03/12/2009	04/12/2009
3400 Dissolved Mercury in Water by FIMS	Melbourne 1645	01/12/2009	03/12/2009
4000 pH in Water	Melbourne 1645	03/12/2009	04/12/2009
4010 Conductivity in Water	Melbourne 1645	03/12/2009	04/12/2009
4110 Dissolved Solids in Water	Melbourne 1645	01/12/2009	04/12/2009
4300 Anions in Water by IC	Melbourne 1645	02/12/2009	04/12/2009
4550 Alkalinity in Water	Melbourne 1645	03/12/2009	04/12/2009

Test Description

4000 pH in Water	As noted in LM-FOR-ADM-020 pH should be tested in the field, therefore this test has been analysed in the laboratory outside Holding Times

Labmark Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
9. Samples were analysed on an as received basis.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1848416 [Method Blank]							
3400 Dissolved Mercury in Water by FIMS							
Mercury	µg/L	<0.1			< 0.1	Pass	
1848821 [Method Blank]							
3100 Dissolved Metals in Water By ICP/MS							
Antimony	µg/L	<5			< 5	Pass	
Arsenic	µg/L	<5			< 5	Pass	
Barium	µg/L	<5			< 5	Pass	
Beryllium	µg/L	<5			< 5	Pass	
Boron	µg/L	<5			< 5	Pass	
Cadmium	µg/L	<5			< 5	Pass	
Chromium	µg/L	<5			< 5	Pass	
Cobalt	µg/L	<5			< 5	Pass	
Copper	µg/L	<5			< 5	Pass	
Lead	µg/L	<5			< 5	Pass	
Manganese	µg/L	<5			< 5	Pass	
Molybdenum	µg/L	<5			< 5	Pass	
Nickel	µg/L	<5			< 5	Pass	
Selenium	µg/L	<5			< 5	Pass	
Tin	µg/L	<5			< 5	Pass	
Vanadium	µg/L	<5			< 5	Pass	
Zinc	µg/L	<5			< 5	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1852354 [Method Blank]							
3200 Dissolved Metals in Water - ICP/AES							
Calcium	µg/L	<100			< 100	Pass	
Iron	µg/L	<100			< 100	Pass	
Magnesium	µg/L	<100			< 100	Pass	
Potassium	µg/L	<1000			< 1000	Pass	
Sodium	µg/L	<100			< 100	Pass	
1848417 [Laboratory Control Sample]							
3400 Dissolved Mercury in Water by FIMS			Expected Value	Percent Recovery			
Mercury	µg/L	10	10.0	101	80-120 %	Pass	
1848822 [Laboratory Control Sample]							
3100 Dissolved Metals in Water By ICP/MS			Expected Value	Percent Recovery			
Antimony	µg/L	110	100.0	106	80-120 %	Pass	
Arsenic	µg/L	100	100.0	101	80-120 %	Pass	
Barium	µg/L	110	100.0	105	80-120 %	Pass	
Beryllium	µg/L	100	100.0	100	80-120 %	Pass	
Boron	µg/L	100	100.0	100	80-120 %	Pass	
Cadmium	µg/L	110	100.0	105	80-120 %	Pass	
Chromium	µg/L	100	100.0	101	80-120 %	Pass	
Cobalt	µg/L	99	100.0	99	80-120 %	Pass	
Copper	µg/L	100	100.0	101	80-120 %	Pass	
Lead	µg/L	110	100.0	106	80-120 %	Pass	
Manganese	µg/L	98	100.0	98	80-120 %	Pass	
Molybdenum	µg/L	100	100.0	105	80-120 %	Pass	
Nickel	µg/L	100	100.0	100	80-120 %	Pass	
Selenium	µg/L	100	100.0	104	80-120 %	Pass	
Tin	µg/L	110	100.0	108	80-120 %	Pass	
Vanadium	µg/L	99	100.0	99	80-120 %	Pass	
Zinc	µg/L	100	100.0	101	80-120 %	Pass	
1852355 [Laboratory Control Sample]							
3200 Dissolved Metals in Water - ICP/AES			Expected Value	Percent Recovery			
Calcium	µg/L	10900	10000.0	109	80-120 %	Pass	
Iron	µg/L	11000	10000.0	108	80-120 %	Pass	
Magnesium	µg/L	11100	10000.0	111	80-120 %	Pass	
Potassium	µg/L	10700	10000.0	107	80-120 %	Pass	
Sodium	µg/L	10800	10000.0	108	80-120 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1848090 [Method Blank]							
2000 TPH (C10 - C36) in Water by GC							
C10-C14 Fraction	µg/L	<40			< 40	Pass	
C15-C28 Fraction	µg/L	<100			< 100	Pass	
C29-C36 Fraction	µg/L	<100			< 100	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1848092 [Method Blank]							
2100 PAH in Water by GC							
Acenaphthene	µg/L	<1.0			< 1	Pass	
Acenaphthylene	µg/L	<1.0			< 1	Pass	
Anthracene	µg/L	<1.0			< 1	Pass	
Benz(a)anthracene	µg/L	<1.0			< 1	Pass	
Benzo(a)pyrene	µg/L	<1.0			< 1	Pass	
Benzo(b)&(k)fluoranthene	µg/L	<2.0			< 2	Pass	
Benzo(ghi)perylene	µg/L	<1.0			< 1	Pass	
Chrysene	µg/L	<1.0			< 1	Pass	
Dibenz(ah)anthracene	µg/L	<1.0			< 1	Pass	
Fluoranthene	µg/L	<1.0			< 1	Pass	
Fluorene	µg/L	<1.0			< 1	Pass	
Indeno(123-cd)pyrene	µg/L	<1.0			< 1	Pass	
Naphthalene	µg/L	<1.0			< 1	Pass	
Phenanthrene	µg/L	<1.0			< 1	Pass	
Pyrene	µg/L	<1.0			< 1	Pass	
Sum of PAHs	µg/L	<1.0			< 1	Pass	
2-Fluorobiphenyl - Surrogate	%	97			70-130 %	Pass	
Anthracene-D10 - Surrogate	%	88			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	89			70-130 %	Pass	
2800 Individual Phenols in Water by GC							
2,3,4,6-Tetrachlorophenol	µg/L	<10			< 10	Pass	
2,3,4-Trichlorophenol	µg/L	<10			< 10	Pass	
2,3,5,6-Tetrachlorophenol	µg/L	<10			< 10	Pass	
2,3,5-Trichlorophenol	µg/L	<10			< 10	Pass	
2,3,6-Trichlorophenol	µg/L	<10			< 10	Pass	
2,3-Dichlorophenol	µg/L	<20			< 20	Pass	
2,4&2,5-Dichlorophenol	µg/L	<40			< 40	Pass	
2,4,6-Trichlorophenol	µg/L	<10			< 10	Pass	
2,6-Dichlorophenol	µg/L	<10			< 10	Pass	
2-Chlorophenol	µg/L	<10			< 10	Pass	
2-Methylphenol	µg/L	<10			< 10	Pass	
3,4-Dichlorophenol	µg/L	<20			< 20	Pass	
3,5-Dichlorophenol	µg/L	<20			< 20	Pass	
3-Chlorophenol & 4-Chlorophenol	µg/L	<10			< 10	Pass	
3-Methylphenol & 4-Methylphenol	µg/L	<10			< 10	Pass	
4-Chloro-3-methylphenol	µg/L	<10			< 10	Pass	
Pentachlorophenol	µg/L	<30			< 30	Pass	
Phenol	µg/L	<10			< 10	Pass	
2,4,6-Tribromophenol-Surrogate	%	65			50-130 %	Pass	
1848091 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Water by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	µg/L	150	200.0	74	70-130 %	Pass	
C15-C28 Fraction	µg/L	221	200.0	111	70-130 %	Pass	
C29-C36 Fraction	µg/L	197	200.0	98	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1848093 [Laboratory Control Sample]							
2100 PAH in Water by GC			Expected Value	Percent Recovery			
Acenaphthene	µg/L	3.6	4.0	90	70-130 %	Pass	
Acenaphthylene	µg/L	3.9	4.0	97	70-130 %	Pass	
Anthracene	µg/L	3.5	4.0	88	70-130 %	Pass	
Benz(a)anthracene	µg/L	3.7	4.0	92	70-130 %	Pass	
Benzo(a)pyrene	µg/L	3.8	4.0	96	70-130 %	Pass	
Benzo(b)&(k)fluoranthene	µg/L	7.5	8.0	93	70-130 %	Pass	
Benzo(ghi)perylene	µg/L	3.9	4.0	96	70-130 %	Pass	
Chrysene	µg/L	3.7	4.0	94	70-130 %	Pass	
Dibenz(ah)anthracene	µg/L	3.9	4.0	97	70-130 %	Pass	
Fluoranthene	µg/L	3.8	4.0	95	70-130 %	Pass	
Fluorene	µg/L	3.6	4.0	91	70-130 %	Pass	
Indeno(123-cd)pyrene	µg/L	3.8	4.0	95	70-130 %	Pass	
Naphthalene	µg/L	4.0	4.0	99	70-130 %	Pass	
Phenanthrene	µg/L	3.6	4.0	91	70-130 %	Pass	
Pyrene	µg/L	3.8	4.0	94	70-130 %	Pass	
Sum of PAHs	µg/L	60	64.0	94	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	103			70-130 %	Pass	
Anthracene-D10 - Surrogate	%	97			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	93			70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847317 [Method Blank]							
1100 MAH(BTEX & C6-C9) in Water P&T							
Benzene	µg/L	<0.5			< 0.5	Pass	
C6-C9 Fraction	µg/L	<20.0			< 20	Pass	
Ethylbenzene	µg/L	<1.0			< 1	Pass	
Meta- & Para- Xylene	µg/L	<2.0			< 2	Pass	
Ortho-Xylene	µg/L	<1.0			< 1	Pass	
Toluene	µg/L	<1.0			< 1	Pass	
Total Xylenes	µg/L	<3.0			< 3	Pass	
4-Bromofluorobenzene - Surrogate	%	85			70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847351 [Method Blank]							
1300 VOCs in Water by P&T							
1,1,1,2-Tetrachloroethane	µg/L	<5.0			< 5	Pass	
1,1,1-Trichloroethane	µg/L	<5.0			< 5	Pass	
1,1,2,2-Tetrachloroethane	µg/L	<5.0			< 5	Pass	
1,1,2-Trichloroethane	µg/L	<5.0			< 5	Pass	
1,1-Dichloroethane	µg/L	<30.0			< 30	Pass	
1,1-Dichloroethene	µg/L	<5.0			< 5	Pass	
1,1-Dichloropropylene	µg/L	<5.0			< 5	Pass	
1,2,3-Trichlorobenzene	µg/L	<5.0			< 5	Pass	
1,2,3-Trichloropropane	µg/L	<5.0			< 5	Pass	
1,2,4-Trichlorobenzene	µg/L	<5.0			< 5	Pass	
1,2,4-Trimethylbenzene	µg/L	<5.0			< 5	Pass	
1,2-Dibromo-3-chloropropane	µg/L	<5.0			< 5	Pass	
1,2-Dibromoethane	µg/L	<5.0			< 5	Pass	
1,2-Dichlorobenzene	µg/L	<5.0			< 5	Pass	
1,2-Dichloroethane	µg/L	<5.0			< 5	Pass	
1,2-Dichloropropane	µg/L	<5.0			< 5	Pass	
1,3,5-Trimethylbenzene	µg/L	<5.0			< 5	Pass	
1,3-Dichlorobenzene	µg/L	<5.0			< 5	Pass	
1,3-Dichloropropane	µg/L	<5.0			< 5	Pass	
1,4-Dichlorobenzene	µg/L	<5.0			< 5	Pass	
2,2-Dichloropropane	µg/L	<30.0			< 30	Pass	
2-butanone	µg/L	<50.0			< 50	Pass	
2-Chlorotoluene	µg/L	<5.0			< 5	Pass	
4-Chlorotoluene	µg/L	<5.0			< 5	Pass	
4-methyl-2-pentanone	µg/L	<50.0			< 50	Pass	
Benzene	µg/L	<0.5			< 0.5	Pass	
Bromobenzene	µg/L	<5.0			< 5	Pass	
Bromochloromethane	µg/L	<5.0			< 5	Pass	
Bromodichloromethane	µg/L	<5.0			< 5	Pass	
Bromoform	µg/L	<5.0			< 5	Pass	
Bromomethane	µg/L	<5.0			< 5	Pass	
Carbon Tetrachloride	µg/L	<5.0			< 5	Pass	
Chlorobenzene	µg/L	<5.0			< 5	Pass	
Chloroethane	µg/L	<5.0			< 5	Pass	
Chloromethane	µg/L	<5.0			< 5	Pass	
cis-1,2-Dichloroethene	µg/L	<5.0			< 5	Pass	
cis-1,3-Dichloropropene	µg/L	<5.0			< 5	Pass	
Dibromochloromethane	µg/L	<5.0			< 5	Pass	
Dibromomethane	µg/L	<5.0			< 5	Pass	
Dichlorodifluoromethane	µg/L	<5.0			< 5	Pass	
Ethylbenzene	µg/L	<1.0			< 1	Pass	
Hexachlorobutadiene	µg/L	<5.0			< 5	Pass	
Hexachloroethane	µg/L	<5.0			< 5	Pass	
Isopropylbenzene	µg/L	<5.0			< 5	Pass	
Meta- & Para- Xylene	µg/L	<2.0			< 2	Pass	
Methylene Chloride	µg/L	<10.0			< 10	Pass	
Naphthalene	µg/L	<5.0			< 5	Pass	
n-Butylbenzene	µg/L	<5.0			< 5	Pass	
n-Propylbenzene	µg/L	<5.0			< 5	Pass	
Ortho-Xylene	µg/L	<1.0			< 1	Pass	
Pentachloroethane	µg/L	<5.0			< 5	Pass	
p-Isopropyltoluene	µg/L	<5.0			< 5	Pass	
sec-Butylbenzene	µg/L	<5.0			< 5	Pass	
Styrene	µg/L	<5.0			< 5	Pass	
tert-Butylbenzene	µg/L	<5.0			< 5	Pass	
Tetrachloroethene	µg/L	<5.0			< 5	Pass	
Toluene	µg/L	<1.0			< 1	Pass	
Total Xylenes	µg/L	<3.0			< 3	Pass	
trans-1,2-Dichloroethene	µg/L	<5.0			< 5	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847351 [Method Blank]							
1300 VOCs in Water by P&T							
trans-1,3-Dichloropropene	µg/L	<5.0			< 5	Pass	
Trichloroethene	µg/L	<5.0			< 5	Pass	
Trichlorofluoromethane	µg/L	<5.0			< 5	Pass	
Vinyl chloride	µg/L	<5.0			< 5	Pass	
1847319 [Laboratory Control Sample]							
1100 MAH(BTEX & C6-C9) in Water P&T			Expected Value	Percent Recovery			
Benzene	µg/L	7.0	10.0	70	70-130 %	Pass	
C6-C9 Fraction	µg/L	100	140.0	73	70-130 %	Pass	
Ethylbenzene	µg/L	7.7	10.0	77	70-130 %	Pass	
Meta- & Para- Xylene	µg/L	17	20.0	84	70-130 %	Pass	
Ortho-Xylene	µg/L	9.9	10.0	99	70-130 %	Pass	
Toluene	µg/L	8.6	10.0	86	70-130 %	Pass	
Total Xylenes	µg/L	27	30.0	89	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	86			70-130 %	Pass	
1847352 [Laboratory Control Sample]							
1300 VOCs in Water by P&T			Expected Value	Percent Recovery			
1,1,1-Trichloroethane	µg/L	120	25.0	84	70-130 %	Pass	
1,1,2,2-Tetrachloroethane	µg/L	110	25.0	114	70-130 %	Pass	
1,1,2-Trichloroethane	µg/L	120	25.0	155	70-130 %	Fail	
1,1-Dichloroethane	µg/L	120	25.0	85	70-130 %	Pass	
1,1-Dichloroethene	µg/L	95	25.0	50	70-130 %	Fail	
1,2-Dichlorobenzene	µg/L	120	25.0	123	70-130 %	Pass	
1,2-Dichloroethane	µg/L	130	25.0	130	70-130 %	Pass	
1,2-Dichloropropane	µg/L	120	25.0	95	70-130 %	Pass	
1,3-Dichlorobenzene	µg/L	120	25.0	103	70-130 %	Pass	
1,4-Dichlorobenzene	µg/L	120	25.0	123	70-130 %	Pass	
Benzene	µg/L	120	25.0	97	70-130 %	Pass	
Bromodichloromethane	µg/L	130	25.0	108	70-130 %	Pass	
Bromoform	µg/L	110	25.0	120	70-130 %	Pass	
Carbon Tetrachloride	µg/L	110	25.0	68	70-130 %	Fail	Q13
Chlorobenzene	µg/L	120	25.0	105	70-130 %	Pass	
Chloroform	µg/L	120	25.0	117	70-130 %	Pass	
cis-1,3-Dichloropropene	µg/L	100	25.0	129	70-130 %	Pass	
Dibromochloromethane	µg/L	120	25.0	123	70-130 %	Pass	
Ethylbenzene	µg/L	120	25.0	86	70-130 %	Pass	
Methylene Chloride	µg/L	110	25.0	81	70-130 %	Pass	
Tetrachloroethene	µg/L	82	25.0	68	70-130 %	Fail	
Toluene	µg/L	120	25.0	105	70-130 %	Pass	
trans-1,2-Dichloroethene	µg/L	100	25.0	61	70-130 %	Fail	
trans-1,3-Dichloropropene	µg/L	110	25.0	98	70-130 %	Pass	
Trichloroethene	µg/L	130	25.0	92	70-130 %	Pass	

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847608 [Method Blank]							
4110 Dissolved Solids in Water							
Total Dissolved Solids	mg/L	<20			< 20	Pass	
1849574 [Method Blank]							
4300 Anions in Water by IC							
Bromide	mg/L	<0.5			< 0.5	Pass	
Chloride	mg/L	<0.5			< 0.5	Pass	
Fluoride	mg/L	<0.5			< 0.5	Pass	
Nitrate	mg/L	<0.5			< 0.5	Pass	
Nitrite	mg/L	<0.5			< 0.5	Pass	
Orthophosphate	mg/L	<0.5			< 0.5	Pass	
Sulphate	mg/L	<0.5			< 0.5	Pass	

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847609 [Laboratory Control Sample]							
4110 Dissolved Solids in Water			Expected Value	Percent Recovery			
Total Dissolved Solids	mg/L	920	1000.0	92	90-110 %	Pass	
1849575 [Laboratory Control Sample]							
4300 Anions in Water by IC			Expected Value	Percent Recovery			
Bromide	mg/L	100	100.0	104	80-120 %	Pass	
Chloride	mg/L	100	100.0	100	80-120 %	Pass	
Fluoride	mg/L	97	100.0	97	80-120 %	Pass	
Nitrate	mg/L	120	100.0	116	80-120 %	Pass	
Nitrite	mg/L	90	100.0	90	80-120 %	Pass	
Orthophosphate	mg/L	99	100.0	99	80-120 %	Pass	
Sulphate	mg/L	110	100.0	109	80-120 %	Pass	
1851759 [Laboratory Control Sample]							
4010 Conductivity in Water			Expected Value	Percent Recovery			
Electrical Conductivity	µS/cm	1410	1413.0	100	95-105 %	Pass	
1851761 [Laboratory Control Sample]							
4000 pH in Water			Expected Value	Percent Recovery			
pH	pH	7.4	7.4	100	95-105 %	Pass	
1851810 [Laboratory Control Sample]							
4550 Alkalinity in Water			Expected Value	Percent Recovery			
Carbonate as CaCO3	mg/L	1010	1000.0	101	90-110 %	Pass	
Total Alkalinity as CaCO3	mg/L	961	1000.0	96	90-110 %	Pass	

Sample Integrity

Custody Seals Intact (if used)	Yes
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
I03	This sample was not received in a suitable timeframe to allow completion within the recommended holding time
Q13	Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. For any failed elements; positive results in blind samples can only be used as a guide. All other QC has passed in this test batch.

Authorised By

Grace Anderson	Client Services Officer	
Alex Petridis	Senior Analyst - SVOC	Accreditation Number: 1645
Barry Blythman	Senior Analyst - VOC	Accreditation Number: 1645
Mark Herbstreit	Senior Analyst - Metals	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Patricia Hua	Senior Analyst	Accreditation Number: 1645

Laboratory Manager

David Elliott — Laboratory Manager - Melbourne

Final Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Laboratory staff.

PROJECT: 09ENME0044068

Client: OTEK AUSTRALIA PTY LTD

Contact: Gurdeep Khosa
Ph: **Fax:**
Debtor Code: 174910
Contract Number: 4896
Quarantine Samp: No

Due Date:	7/12/2009 3:00:00PM
Order Number:	0780
Project Reference:	3106004/1001
Lab Contact:	RCALLANDER

Date Received: 30/11/2009 12:00:0
Priority: 4

Sample Type:

Sample ID, Lab ID,Desc & matrix		METALS			'REI	SVOC				VOC		WATERS				
		M_FIMS_W01	M_ICPA_W01	M_ICPM_W01	_BOX_SAMPL	PAH_W01	PHENOL_W01	SV_EXT_W01	TPHC10_W01	BTEX_W01	VOC_W01	ALK_WAT07	ANIONS_W01	EC_W01	PH_W01	SOL_DIS_W1
1847008	09ENME0044068-1 - A1/QS-1A -	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

Logged in by: **MCASSIDY**

	coc required	coc Delivered
Micro	☐	☐
Metals	☐	☐
Voc	☐	☐
Svoc EXT-W	☐	☐
Svoc EXT-S	☐	☐
Waters	☐	☐

☐ **QC Split Required**

Prepared By:_____
Date:_____

Sample Receipt Advice

LabMark
ENVIRONMENTAL LABORATORIES

Customer Service - 1300 052 262

Client Name:	OTEK AUSTRALIA PTY LTD	**Date Received:**	30 November 2009
Attention:	Tom Santwyk-Anderson	**Due Date:**	7 December 2009
Client Reference number:	3106004/1001 Area 4 GME	**Turnaround:**	Standard

Laboratory Reference Number:	09ENME0044068	**Your Laboratory Contact:**	Ruth Callander +61 3 9265 9300

If you have any queries regarding turnaround and sample progress, technical queries or wish to make changes please contact the laboratory immediately.

Job Information

Sample Integrity	
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No
Custody Seals Intact (if used)	Yes

Analysis Requested

Analysis Requested	Method Code	Number Of Samples
Alkalinity in Water	4550	1
Anions in Water by IC	4300	1
BTEX & (C6-C9) in Water by P&T	1100	1
Conductivity in Water	4010	1
Dissolved Mercury in Water by FIMS	3400	1
Dissolved Metals in Water - ICP/AES	3200	1
Dissolved Metals in Water By ICP/MS	3100	1
PAH in Water by GC	2100	1
pH in Water	4000	1
Individual Phenols in Water by GC	2800	1
Dissolved Solids in Water	4110	1
TPH (C10 - C36) in Water by GC	2000	1
VOCs in Water by P&T	1300	1

Note

- Turn Around Time starts when samples are received at the Laboratory
- For samples received after 4pm, Turn Around Time starts the next working day
- For samples received on the last day of holding time, notification of testing requirements must be given at least 6 hours prior to the sample receipt deadlines; Should the laboratory not receive the information in the required timeframe a suitably qualified results may still be reported.
- Surcharges may apply for 24 , 48 and 72 hour turnaround.
- Water samples will be discarded after 4 weeks unless notified.
- Soil samples are chilled for 1 month and will be discarded after 3 months unless notified.
- Samples submitted for Micro analysis on a Friday may incur a $150 surcharge and / or be analysed outside holding time (24 Hour Holding Time).
- The Quoted Due Date does not apply to sub-contracted tests or some in-house tests. Contact your Customer Support Officer for details
  NOTE: Unless advised otherwise - Sample analysis will commence regardless of integrity issues and / or non-conformance and these will be recorded on the final report.

Logged in by : Michael Cassidy

Date : Mon 30 November 2009

Ref (6)

COC NUMBER: 0105

LAB Labmark
ADDRESS Dandenong Rd Clayton
LAB CONTACT
PHONE

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to vicreception@otek.com.au & gkhosa @otek.com.au kbeglie

OTEK AUSTRALIA PTY LTD

PROJECT # 31060041/1001

PROJECT NAME Area 4 GME

COLLECTORS NAME Kaye

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL

FINAL REPORT BY: 1 week

LAB QUOTE REF: National Agreement

OTEK PO No.: 0780

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX	PRESERVATION METHOD				SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE												REMARKS
			Soil / Water / Sludge / Air	ICE	ACIDIFIED	OTHER	NONE			Metals (M19)	BTEX, TPH, DAH	TDS, EC, pH	Nitrate, Nitrite	Alkalinity, Sulphate	Total Anions, Total Cations	Chloride	Ca, Mg, Na, K	VOC's, Phenols				
DISCRETE SAMPLE REQUEST:																						
A1/QS-1A			W	X	X			25/11/09	5	X	X	X	X	X	X	X	X	X				PLEASE FORWARD TO LABMARK

DEENME00440GB-1(1847008)
OTEK...ML1B(A1/QS-1A)

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Kaye Beglie (Signature)

Date 27/11/09

Relinquished by:	Date	Time	Received by:	Date	Time	
Kaye B	27/11	14.40	438	3.15PM 27/11		Custody Seals Intact? Yes / No / NA
Relinquished by:	Date	Time	Received by:	Date	Time	
438	4pm		Michael Cassidy	30/4/09	15:55	Samples Received Chilled? Yes / No
Relinquished by:	Date	Time	Received by:	Date	Time	

Additional Comments:

Please provide electronic results in ESDAT format

LABMARK ENVIRONMENTAL LABORATORIES

SAMPLE RECEIVAL CHECKLIST

	Yes	No
1. Is there a Chain of Custody with the samples?	☑	☐
2. Are the correct number of samples present as listed on the COC?	☑	☐
3. Are the correct matrix types present?	☑	☐
4. Are samples compliant in regards to headspace present?	☑	☐
5. Where applicable, do all the samples have the correct preservative?	☑	☐
6. Do the delivered samples match the client reference number and sample ID's listed on the COC?	☑	☐
7. Is there sufficient sample for the requested testing to be performed?	☑	☐
8. Do we have a grace period of at least 36 hours before samples are Outside of holding time?	☑	☐

NOTE: If the answer is 'NO' for any of the above, then it should be reported immediately to the Customer Service Manager, or in their absence, to their designated delegate.

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9. Are there any Dust samples?	☐	☑
‹ If so, does the client require the bottles to be returned?	☐	☐
10. Is a screening sample required?	☑	☐
11. Are any samples for microbiological testing present?	☐	☑
‹ If so, have the Microbiological department been advised?	☐	☐
12. Are there any URGENT samples present?	☐	☑
‹ If so, has the relevant section been advised?	☐	☐
13. Has a Bottle map for the samples been completed?	☑	☐

COMMENTS:

NAME: Michael Cassidy (PLEASE PRINT NAME) DATE: 30/11/09

DATA VALIDATION REPORT

Project Name:	Werribee Hydrogeological Assessment	**Validation Conducted by:**	TB
Project Number:	3106004	**Signed & Dated:**	29/02/2012
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	ALS	**Secondary Laboratory:**	Groundswell	**Soil**
Batch Number:	EM1114048	**Batch Number:**	GS11486	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
11	1	1	4

Have the Following Criteria Been Met? (Shade)

				Explain any Discrepancies:
Blind Replicate	OK if >5%	9.0909	NOT OK if <5%	QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.
Split Sample	OK if >5%	9.0909	NOT OK if <5%	QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.
Blank Samples	OK	4	NOT OK	Field blank sampling has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

2 Rinsate
Field
2 Trip

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)
1	Number obtained	1
QW-1-081211	Sample Identification	QW-1A-081211
64 (A)	Total Number of Analytes	53 (B)
1	No. of analytes with RPD >50% (Fail)	1
63	Number of analytes <50% (Pass)	52
98.4	% Pass	98.1

Explain any Discrepancies:

QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

QW-1-081211 - Exceedance for Cobalt with an RPD of 67%.

QW-1A-081211 - Exceedance for Nitrate (as N) with an RPD of 125%.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	2		2
Sample Identifictaion	TB-1-091211 TB-2-091211		RB-1-071211 RB-2-081211
Number of Analytes	18		18
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	D	E

Explain any Discrepancies:

Trip blank sampling has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	No. Passes	11	-
	No. Fails	0	-
Analysis	No. Passes	28	-
	No. Fails	2	-

Explain any Discrepancies:

Fails were due to holding time breaches for Nitrite and Nitrate as N

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: **Laboratory Data Quality - Refer to Certificate of Analysis**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	118	2
# samples RPD >50% **(FAIL)**	1	0
% Pass	99	100

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

QW-1-081211 - Antimony had an RPD>50%

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	78	55
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	76	30
# analytes outside range i.e <70% or >130% **(FAIL)**	15	3
% Pass	80	90

Surrogates

OK (>95%)	85
NOT OK (<95%)	

Explanation for Failures:

QW-1-081211: 14 analysis for PAH and one analysis for TPH fell outside the acceptable Surrogate Internal Spike Recovery range for anonymous samples.

QW-1A-081211: 2 analysis for PAH and one analysis for TRH fell outside the acceptable Surrogate Internal Spike Recovery range for anonymous samples.

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	34	
# Analytes outside range i.e <70% or >130%	0	
% Pass	100	-

Internal Spikes

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

FINAL DATA

A	
B	
C	
D	
E	
F & G	
H & I	
J & K	
L & M	

Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
Primary Duplicates	1	64	98.4
Secondary Duplicates	1	53	98.1
Trip Blanks	0	18	100.0
Field Blanks	0	0	-
Rinsate Blanks	0	18	100.0
Lab Internal Duplicates	1	120	99.2
Lab Method Blanks	0	133	100.0
Lab Internal Spike Recoveries	18	106	83.0
Laboratory Spike Recoveries	0	34	100.0
Total	**21**	**546**	**96.2**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

Groundswell Laboratories

" A New Force in Analytical Testing"

CERTIFICATE OF ANALYSIS

Client Name :	OTEK Australia	**Groundswell Batch # :**	GS11486
Client Address :	Level 1, 222 St Kilda Road, St Kilda, Vic, 3182	**Project Name :**	Werribee GME#5
Client Phone # :	03 9525 5155	**Project # :**	3106004
Client Fax # :	03 9593 8555	**Date Samples Received :**	12/12/2011
Project Manager :	Luke Dallago	**Sample Matrix :**	Water
E-mail :	ldallago@otek.com.au	**Sample # Submitted :**	1
Project Sample Manager :	Kane Begbie	**Groundswell Quote # :**	GS2011-018
E-mail :	kbegbie@otek.com.au	**Date CofA Issued :**	1/01/2012

Paul Woodward

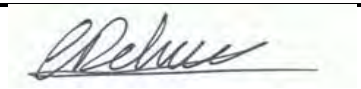
Managing Director

paul@groundswelllabs.com.au

NATA Accredited Laboratory 17067

This Document is issued in accordance with NATA accreditation requirements

Accredited for compliance with ISO/IEC 17025



Chris De Luca

Senior Chemist

chris@groundswelllabs.com.au

Reference AF55.Rev4 Date Issued : 3/11/2010

Inorganics Results

Client Sample ID				QW_1A_081211								
Laboratory Sample Number				GS11486-1								
Date Sampled				8/12/2011								
Analyte	**Literature Reference**	**Units**	**LOR**									
Conductivity	APHA 2510 B	µS/cm @ 25°C	1	9680								
Major Cations												
Calcium	GSLS	mg/L	0.1	400								
Magnesium	GSLS	mg/L	0.1	410								
Sodium	GSLS	mg/L	0.1	1310								
Potassium	GSLS	mg/L	0.1	17								
Major Anions												
Alkalinity - Total	GSLS	mg/L	1	200								
Chloride	GSLS	mg/L	1	3690								
Sulphate	In House	mg/L	1	245								
Inorganics												
Total Dissolved Solids	APHA 2540 C	mg/L	25	8290								
Nutrients												
Nitrate	GSLS	mg/L	0.1	5.2								
Nitrite	GSLS	mg/L	0.1	<0.1								

Comments :

1- TDS result is biasing high due to the presence of fine particulates passing through the prescribed GF-C filter paper

2- The analysis of Ca, Mg, Na, K, alkalinity, chloride, nitrate & nitrite were conducted by Sydney Analytical Laboratories, report #SAL23857X, Nata accreditaion #1884.

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Inorganics Quality Control Report

Client Sample ID			QW_1A_081211									
Laboratory Sample Number			GS11486-1									
QC Parameter			Laboratory Duplicate					Method Blank		Laboratory Control Standard (LCS)		
			Original Result	Duplicate	%RPD	%RPD Acceptance Criteria	Within GSL Acceptance Criteria (Pass/Fail)	Method Blank	Within GSL Acceptance Criteria (<LOR) (Pass/Fail)	LCS (%R)	LCS (%R) Acceptance Criteria	Within GSL Acceptance Criteria (Pass/Fail)
Analyte	**Units**	**LOR**										
Conductivity	µS/cm @ 25°C	1	9680	9680	0%	≤20%	Pass	<1	Pass	101%	80-120%	Pass
Major Cations												
Calcium	mg/L	0.1	---	---	---	≤20%	---	<0.1	Pass	---	85-115%	---
Magnesium	mg/L	0.1	---	---	---	≤20%	---	<0.1	Pass	---	85-115%	---
Sodium	mg/L	0.1	---	---	---	≤20%	---	<0.1	Pass	---	85-115%	---
Potassium	mg/L	0.1	---	---	---	≤20%	---	<0.1	Pass	---	85-115%	---
Major Anions												
Alkalinity - Total	mg/L	5	---	---	---	≤20%	---	<1	Pass	---	80-120%	---
Chloride	mg/L	1	---	---	---	≤20%	---	<1	Pass	---	80-120%	---
Sulphate	mg/L	1	245	295	18%	≤20%	Pass	<1	Pass	98%	80-120%	Pass
Inorganics												
Total Dissolved Solids	mg/L	25	---	---	---	≤20%	---	<25	Pass	100%	80-120%	Pass
Nutrients												
Nitrate	mg/L	0.1	---	---	---	≤20%	---	<0.1	Pass	---	80-120%	---
Nitrite	mg/L	0.1	---	---	---	≤20%	---	<0.1	Pass	---	80-120%	---

Reference AF55.Rev4 Date Issued : 3/11/2010

Inorganics Technical Holding Time Compliance Report

Client Sample ID			QW_1A_081211
Laboratory Sample Number			GS11486-1
Date Sampled			8/12/2011
Analyte	**THT Parameters**	**THT (Days)**	
Conductivity	Analysis Date	28	16/12/2011
	Analysis Time (Days)		8
	THT Compliant		Yes
Major Cations			
Cations	Analysis Date	180	21/12/2011
	Analysis Time (Days)		13
	THT Compliant		Yes
Major Anions			
Alkalinity - All Forms	Analysis Date	1	15/12/2011
	Analysis Time (Days)		7
	THT Compliant		No
Chloride	Analysis Date	28	21/12/2011
	Analysis Time (Days)		13
	THT Compliant		Yes
Sulphate	Analysis Date	28	21/12/2011
	Analysis Time (Days)		13
	THT Compliant		Yes
Inorganics			
Total Dissolved Solids	Analysis Date	7	15/12/2011
	Analysis Time (Days)		7
	THT Compliant		Yes
Nutrients			
Nitrate & Nitrite	Analysis Date	2	21/12/2011
	Analysis Time (Days)		13
	THT Compliant		No

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Metals Results

Client Sample ID				QW_1A_081211								
Laboratory Sample Number				GS11486-1								
Date Sampled				8/12/2011								
Metal	**Literature Reference**	**Units**	**LOR**									
Antinmony	GSLS	mg/L	0.01	<0.01								
Arsenic	GSLS	mg/L	0.01	<0.01								
Barium	GSLS	mg/L	0.01	0.11								
Boron	GSLS	mg/L	0.1	0.1								
Cadmium	GSLS	mg/L	0.001	<0.001								
Chromium	GSLS	mg/L	0.01	<0.01								
Hexavalent Chromium	USEPA 7196A	mg/L	0.002	0.009								
Cobalt	GSLS	mg/L	0.01	<0.01								
Copper	GSLS	mg/L	0.01	0.01								
Lead	GSLS	mg/L	0.01	<0.01								
Manganese	GSLS	mg/L	0.01	0.02								
Mercury	GSLS	mg/L	0.0001	<0.0001								
Molybdenum	GSLS	mg/L	0.01	<0.01								
Nickel	GSLS	mg/L	0.01	<0.01								
Selenium	GSLS	mg/L	0.01	<0.01								
Tin	GSLS	mg/L	0.01	<0.01								
Vanadium	GSLS	mg/L	0.01	<0.01								
Zinc	GSLS	mg/L	0.01	0.1								

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Metals Quality Control Report

Client Sample ID							
Laboratory Sample Number							
QC Parameter			Method Blank		Laboratory Control Standard (LCS)		
			Method Blank	Within GSL Acceptance Criteria (<LOR) (Pass/Fail)	LCS (%R)	LCS Acceptance Criteria	Within GSL Acceptance Criteria (Pass/Fail)
Metal	**Units**	**LOR**					
Antinmony	mg/L	0.01	<0.01	Pass	--	85-115%	---
Arsenic	mg/L	0.01	<0.01	Pass	--	85-115%	---
Barium	mg/L	0.01	<0.01	Pass	--	85-115%	---
Boron	mg/L	0.1	<0.1	Pass	--	85-115%	---
Cadmium	mg/L	0.001	<0.001	Pass	--	85-115%	---
Chromium	mg/L	0.01	<0.01	Pass	--	85-115%	---
Hexavalent Chromium	mg/L	0.002	<0.002	Pass	100%	90-110%	Pass
Cobalt	mg/L	0.01	<0.01	Pass	--	85-115%	---
Copper	mg/L	0.01	<0.01	Pass	--	85-115%	---
Lead	mg/L	0.01	<0.01	Pass	--	85-115%	---
Manganese	mg/L	0.01	<0.01	Pass	--	85-115%	---
Mercury	mg/L	0.0001	<0.0001	Pass	--	85-115%	---
Molybdenum	mg/L	0.01	<0.01	Pass	--	85-115%	---
Nickel	mg/L	0.01	<0.01	Pass	--	85-115%	---
Selenium	mg/L	0.01	<0.01	Pass	--	85-115%	---
Tin	mg/L	0.01	<0.01	Pass	--	85-115%	---
Vanadium	mg/L	0.01	<0.01	Pass	--	85-115%	---
Zinc	mg/L	0.01	<0.01	Pass	--	85-115%	---

Reference AF55.Rev4 Date Issued : 3/11/2010

Metals Technical Holding Time Compliance Report

Client Sample ID			QW_1A_081211								
Laboratory Sample Number			GS11486-1								
Date Sampled			8/12/2011								
Metal	**THT Parameters**	**THT (Days)**									
All Metals	Analysis Date	180	21/12/2011								
	Analysis Time (Days)		13								
	THT Compliant		Yes								
Hexavalent Chromium	Analysis Date	30	15/12/2011								
	Analysis Time (Days)		7								
	THT Compliant		Yes								

Reference AF55.Rev4 Date Issued : 3/11/2010

TRH Results

Client Sample ID				QW_1A_081211								
Laboratory Sample Number				GS11486-1								
Date Sampled				8/12/2011								
TRH Fraction	**Literature Reference**	**Units**	**LOR**									
TRH C_{6-9}	EP080	µg/L	20	<20								
TRH C_{10-14}	USEPA 8015B	µg/L	100	<100								
TRH C_{15-28}	USEPA 8015B	µg/L	200	<200								
TRH C_{29-36}	USEPA 8015B	µg/L	100	<100								
TRH Sum	---	µg/L	200	<200								
BTEX												
Benzene	EP080	µg/L	1	<1								
Toluene	EP080	µg/L	2	<2								
Ethylbenzene	EP080	µg/L	2	<2								
meta- & para-Xylene	EP080	µg/L	2	<2								
orth-xylene	EP080	µg/L	2	<2								
Sum of BTEX	---	µg/L	2	<2								
Naphthalene	EP080	µg/L	5	<5								
vTRH/BTEX Surrogates												
1,2-Dichloroethane-D4	EP080	%	0.1	120								
Toluene-D8	EP080	%	0.1	95.9								
4-Bromofluorobenzene	EP080	%	0.1	89.6								

Comments :

1- vTRH/BTEX analysis conducted by ALS Sydney, report# ES1127618, NATA accreditation #825

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TRH Quality Control Report

Client Sample ID							
Laboratory Sample Number							
QC Parameter			Method Blank		Laboratory Control Standard (LCS)		
			Method Blank	Within GSL Acceptance Criteria (<LOR) (Pass/Fail)	LCS (%R)	LCS Acceptance Criteria	Within GSL Acceptance Criteria (Pass/Fail)
TRH Fraction	**Units**	**LOR**					
TRH C_{6-9}	µg/L	20	<20	Pass	103%	75-127%	Pass
TRH C_{10-14}	µg/L	100	<100	Pass	89%	70-130%	Pass
TRH C_{15-28}	µg/L	200	<200	Pass	89%	70-130%	Pass
TRH C_{29-36}	µg/L	100	<100	Pass	60%	50-130%	Pass
BTEX							
Benzene	µg/L	1	<1	Pass	93.8%	70-124%	Pass
Toluene	µg/L	2	<2	Pass	80.0%	66-132%	Pass
Ethylbenzene	µg/L	2	<2	Pass	80.9%	70-120%	Pass
meta- & para-Xylene	µg/L	2	<2	Pass	82.1%	69-121%	Pass
orth-xylene	µg/L	2	<2	Pass	86.7%	72-122%	Pass
Naphthalene	µg/L	5	<5	Pass	84.2%	70-124%	Pass

Reference AF55.Rev4 Date Issued : 3/11/2010

TRH Technical Holding Time Compliance

Client Sample ID			QW_1A_081211								
Laboratory Sample Number			GS11486-1								
Date Sampled			8/12/2011								
TRH Fraction	THT Parameters	THT (Days)									
TRH C_{6-9} / BTEXN	Analysis Date	14	18/12/2011								
	Analysis Time (Days)		10								
	THT Compliant		Yes								
TRH C_{10-14}	Analysis Date	7	13/12/2011								
	Analysis Time (Days)		5								
	THT Compliant		Yes								
TRH C_{15-28}	Analysis Date	7	13/12/2011								
	Analysis Time (Days)		5								
	THT Compliant		Yes								
TRH C_{29-36}	Analysis Date	7	13/12/2011								
	Analysis Time (Days)		5								
	THT Compliant		Yes								

Reference AF55.Rev4 Date Issued : 3/11/2010

PAH Results

Client Sample ID				QW_1A_081211								
Laboratory Sample Number				GS11486-1								
Date Sampled				8/12/2011								
PAH	**Literature Reference**	**Units**	**LOR**									
Acenaphthene	USEPA 8270D	µg/L	1	<1								
Acenaphthylene	USEPA 8270D	µg/L	1	<1								
Anthracene	USEPA 8270D	µg/L	1	<1								
Benz(a)anthracene	USEPA 8270D	µg/L	1	<1								
Benzo(b)fluoranthene	USEPA 8270D	µg/L	1	<1								
Benzo(k)fluoranthene	USEPA 8270D	µg/L	1	<1								
Benzo(ghi)perylene	USEPA 8270D	µg/L	1	<1								
Benzo(a)pyrene	USEPA 8270D	µg/L	1	<1								
Chrysene	USEPA 8270D	µg/L	1	<1								
Dibenz(a,h)anthracene	USEPA 8270D	µg/L	1	<1								
Fluoranthene	USEPA 8270D	µg/L	1	<1								
Fluorene	USEPA 8270D	µg/L	1	<1								
Indeno(1,2,3-cd)pyrene	USEPA 8270D	µg/L	1	<1								
Naphthalene	USEPA 8270D	µg/L	1	<1								
Phenanthrene	USEPA 8270D	µg/L	1	<1								
Pyrene	USEPA 8270D	µg/L	1	<1								
Surrogates												
Nitrobenzene-D5	USEPA 8270D	%	1	76%								
2-Fluorobiphenyl	USEPA 8270D	%	1	64%								
p-Terphenyl-D14	USEPA 8270D	%	1	98%								

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PAH Quality Control Report

Client Sample ID								
Laboratory Sample Number								
QC Parameter				Method Blank		Laboratory Control Standard (LCS)		
				Method Blank	Within GSL Acceptance Criteria (<LOR) (Pass/Fail)	LCS (%R)	LCS Acceptance Criteria	Within GSL Acceptance Criteria (Pass/Fail)
PAH	**Literature Reference**	**Units**	**LOR**					
Acenaphthene	USEPA 8270D	µg/L	1	<1	Pass	102%	70-130%	Pass
Acenaphthylene	USEPA 8270D	µg/L	1	<1	Pass	105%	70-130%	Pass
Anthracene	USEPA 8270D	µg/L	1	<1	Pass	100%	70-130%	Pass
Benz(a)anthracene	USEPA 8270D	µg/L	1	<1	Pass	102%	70-130%	Pass
Benzo(b)fluoranthene	USEPA 8270D	µg/L	1	<1	Pass	113%	70-130%	Pass
Benzo(k)fluoranthene	USEPA 8270D	µg/L	1	<1	Pass	123%	70-130%	Pass
Benzo(ghi)perylene	USEPA 8270D	µg/L	1	<1	Pass	61%	60-130%	Pass
Benzo(a)pyrene	USEPA 8270D	µg/L	1	<1	Pass	107%	70-130%	Pass
Chrysene	USEPA 8270D	µg/L	1	<1	Pass	101%	70-130%	Pass
Dibenz(a,h)anthracene	USEPA 8270D	µg/L	1	<1	Pass	66%	60-130%	Pass
Fluoranthene	USEPA 8270D	µg/L	1	<1	Pass	105%	70-130%	Pass
Fluorene	USEPA 8270D	µg/L	1	<1	Pass	104%	70-130%	Pass
Indeno(1,2,3-cd)pyrene	USEPA 8270D	µg/L	1	<1	Pass	74%	70-130%	Pass
Naphthalene	USEPA 8270D	µg/L	1	<1	Pass	101%	70-130%	Pass
Phenanthrene	USEPA 8270D	µg/L	1	<1	Pass	101%	70-130%	Pass
Pyrene	USEPA 8270D	µg/L	1	<1	Pass	109%	70-130%	Pass
Surrogates								
4-Chloro-3-methylphenol	USEPA 8270D	%	1	59%	---	115%	---	---
2-Chlorophenol	USEPA 8270D	%	1	51%	---	97%	---	---
o-Cresol	USEPA 8270D	%	1	66%	---	106%	---	---

Groundswell Laboratories Pty Ltd ABN 24 133 248 923
116 Moray Street, South Melbourne, Victoria, 3205 Ph (03) 8669 1450 Fax (03) 8669 1451 E-mail : admin@groundswelllabs.com.au

PAH Technical Holding Time Compliance

Client Sample ID			QW_1A_081211								
Laboratory Sample Number			GS11486-1								
Date Sampled			8/12/2011								
Analyte	**THT Parameters**	**THT (Days)**									
PAH	Analysis Date	7	13/12/2011								
	Analysis Time (Days)		5								
	THT Compliant		Yes								

Reference AF55.Rev4 Date Issued : 3/11/2010

Groundswell Laboratories

116 Moray Street, South Melbourne, Victoria, 3205.
Ph (03) 8669 1450 Fax (03) 8669 1451 (M) 0416 203 845 e-mail : admin@groundswelllabs.com.au

Sample Receipt Notice

Client Name	OTEK
Client Project Manager	Luke Dallago
Client e-mail	ldallago@otek.com.au
Client Address	Level 1, 222 St Kilda Road, St Kilda, VIC, 3182
Client Phone	03 9525 5155
Project Name	Werribee GME#5
Project Number	3106004
CofC Serial Number	0149
Purchase Order Number	Not Applicable
Date Sampled / Sampling Period	8/12/2011
Date Samples Received	12/12/2011
Date Sample Receipt Notice Issued	14/12/2011
Date Analytical Report Due	20/12/2011
Groundswell Batch Number	GS11486
Groundswell Quote Number	GSQ2011-018
Groundswell Sample Receipt Contact	Paul Woodward
E-mail	paul@groundswelllabs.com.au
Groundswell Reporting Contact	Paul Woodward
E-mail	paul@groundswelllabs.com.au
Reporting Requirements	.pdf, .xlsx
Sample Condition	Samples chilled when received Samples were received in good condition COC populated by Groundswell Laboratories Analytical request on the CofC clear
Comments	Not Applicable
Subcontracted Analysis	Organics analysis sent to ALS-Sydney on the 13/12/2011 Inorganics sent to Sydney Analytical Laboratories on the 13/12/2011
Secondary Laboratory Analysis	Not Applicable

Thanks for choosing Groundswell Laboratories

Batch: GS11486

Pg 1 (5)

COC NUMBER: 0149

LAB ALS
ADDRESS 4 WESTALL RD, SPRINGVALE
LAB CONTACT
PHONE

Page 2 of 2

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to vicreception@otek.com.au & ldallago / Rbeebie @otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT # 3106004
PROJECT NAME WERRIBEE GME#5
COLLECTORS NAME LTD
LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: 1 week

LAB QUOTE REF: EN-018-10
OTEK PO No.: 3677

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: METALS (18)	BTEX TPH (C6-C36)	TDS, EC	Nitrate as N, Fluoride	Alkalinity, Sulphate	TOTAL ANIONS	TOTAL CATIONS	CHLORIDE	Ca Mg Na, K	PAH	Cr 6+	REMARKS
DISCRETE SAMPLE REQUEST:																					
QW-1_081211	–	13	W	X	X			8.12.11		X	X	X	X	X	X	X	X	X	X	X	
QW-1A_081211	–		W	X	X			8.12.11		X	X	X	X	X	X	X	X	X	X	X	→ Please forward to Groundswell South melbourne 116 Moray St South melbourne
RB-1_081211	–	14	W	X	X			7.12.11		X											
RB-2_081211	–	15	W	X	X			8.12.11		X											
TB-1_091211	–	16	W	X	X			9.12.11		X											
TB-2_091211	–	17	W	X	X			7.12.11		X											
RB-07/12/11																					
RB-08/12/11																					
		* Secondary laboratory.																			

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) CRAIG DALLAGO (Signature)

Date

Relinquished by:	Date	Time	Received by:	Date	Time
	9.12.11	8:30		9-12-11	
Relinquished by:	Date	Time	Received by: Raymond	Date 9/12/11	Time 9:45
Relinquished by:	Date	Time	Received by:	Date 12/12/11	Time 4:30pm

Custody Seals Intact? (Yes) / No / NA

Samples Received Chilled? (Yes) / No

Additional Comments:

Please provide electronic results in ESDAT format

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Project Number: 3106004

Address: New Farm Road Werribee

Validation Conducted by: KJB

Signed & Dated: 18/05/2010

Primary Laboratory: ALS

Batch Number: EM0802745

Secondary Laboratory: Amdel

Batch Number: 08ENME0009483
08ENME0009756

Sample Matrix: (Shade)

Soil

Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
52	3	3	11

Have the Following Criteria Been Met? (Shade)

Blind Replicate	**OK if >5%**	11.538
Split Sample	**OK if >5%**	11.538
Blank Samples	**OK**	11

7 Rinsate
0 Field
4 Trip

Explain any Discrepancies:

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
3	**Number obtained**	**3**	
QS3, QS4, QS5	**Sample Identification**	**QS3A, QS4A, QS5A**	
115	**Total Number of Analytes**	99	**B**
0	**No. of analytes with RPD >50% (Fail)**	4	
115	**Number of analytes <50% (Pass)**	95	
100.0	**% Pass**	96.0	
A			

Explain any Discrepancies:

4A/QS-3A - 3 RPD exceedences for Chromium, Cobalt and Nickel with RPD's of 60%, 96% and 64% respectively.

4A/QS-5A - 1 RPD exceedence for Chromium with a RPD of 68%.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	4		7
Sample Identifictaion	TB-1, 2, 3, 4		RB-1, 2, 3, 4, 5, 6, 7,
Number of Analytes	39		78
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Validation Conducted by: KJB

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	91	3
	No. Fails	9	0
Analysis	**No. Passes**	105	3
	No. Fails	3	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	**F**	**G**
	Primary	**Secondary**
TOTAL # Analytes of DUP Samples	906	
# samples RPD >50% **(FAIL)**	0	
% Pass	100	

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

No data provided from Amdel

Method Blank Analysis (MB)	**H**	**I**
	Primary	**Secondary**
TOTAL # Analytes	491	102
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	**J**	**K**
	Primary	**Secondary**
TOTAL # Analytes	405	60
# analytes outside range i.e <70% or >130% **(FAIL)**	19	0
% Pass	95	100

Surrogates

OK (>95%)	98
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	**L**	**M**
	Primary	**Secondary**
TOTAL # Analytes	64	
# Analytes outside range i.e <70% or >130%	14	
% Pass	78	

Internal Spikes

OK (>95%)	78
NOT OK (<95%)	

Explanation for Failures:

No data provided from Amdel

Analytes from Total Metals, OCP, Phenolic Componds, PAH and TPH analysis fell outside the acceptable laboratory range for Matrix Spike Recovery of 70-130%.

FINAL DATA

	Sample Type	**Total Data Quality Objective Fails**	**Total Number of Results**	**% Data Quality Objective Passes**
A	**Primary Duplicates**	0	115	100.0
B	**Secondary Duplicates**	4	99	96.0
C	**Trip Blanks**	0	39	100.0
D	**Field Blanks**	0	0	-
E	**Rinsate Blanks**	0	78	100.0
F & G	**Lab Internal Duplicates**	0	906	100.0
H & I	**Lab Method Blanks**	0	593	100.0
J & K	**Lab Internal Spike Recoveries**	19	465	95.9
L & M	**Laboratory Spike Recoveries**	14	64	78.1
	Total	**37**	**2359**	**98.4**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

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Accredited for compliance with ISO/IEC 17025

Accreditation Number: 1645

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) CHRISTIAN BEASLEY
SIGNATURE CBeasley
DATE 13/4/08

Attention: Emily Burke

Project	**08ENME0009483**
Client Reference	3106004
	Werribee Area 4
Order Number	21190
Received Date	15/04/2008 03:13:00 PM

Customer Sample ID			**4A/QS-4A**	**4A/QS-5A**	**4A/QS-6A**	**4A/QS-8A**	**4A/QS-10A**
Amdel Sample Number			**953151**	**953152**	**953153**	**953154**	**953155**
Date Sampled			**09/04/2008**	**10/04/2008**	**11/04/2008**	**11/04/2008**	**08/04/2008**
VOC							
Test/Reference	PQL	Unit					
1100 TPH (C6-C9) in Soil by P&T							
C6-C9 Fraction	5	mg/kg	-	<5.0	-	-	-
4-Bromofluorobenzene - Surrogate	-	%	-	81	-	-	-
SVOC							
Test/Reference	PQL	Unit					
2300 OC Pesticides in Soil by GC-ECD							
a-BHC	0.5	mg/kg	<0.5	-	-	-	-
a-Chlordane	0.5	mg/kg	<0.5	-	-	-	-
a-Endosulfan	0.5	mg/kg	<0.5	-	-	-	-
Aldrin	0.5	mg/kg	<0.5	-	-	-	-
b-BHC	0.5	mg/kg	<0.5	-	-	-	-
b-Endosulfan	0.5	mg/kg	<0.5	-	-	-	-
d-BHC	0.5	mg/kg	<0.5	-	-	-	-
DDD	0.5	mg/kg	<0.5	-	-	-	-
DDE	0.5	mg/kg	<0.5	-	-	-	-
DDT	0.5	mg/kg	<0.5	-	-	-	-
Dieldrin	0.5	mg/kg	<0.5	-	-	-	-
Endosulfan sulfate	0.5	mg/kg	<0.5	-	-	-	-
Endrin	0.5	mg/kg	<0.5	-	-	-	-
Endrin Aldehyde	0.5	mg/kg	<0.5	-	-	-	-
g-BHC	0.5	mg/kg	<0.5	-	-	-	-
g-Chlordane	0.5	mg/kg	<0.5	-	-	-	-
Heptachlor	0.5	mg/kg	<0.5	-	-	-	-
Heptachlor epoxide	0.5	mg/kg	<0.5	-	-	-	-
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	-	-	-	-
Methoxychlor	0.5	mg/kg	<0.5	-	-	-	-
Oxychlordane	0.5	mg/kg	<0.5	-	-	-	-
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	100	-	-	-	-
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	-	-	-	-
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	-	-	-	-
Diazinon	0.5	mg/kg	<0.5	-	-	-	-
Ethion	0.5	mg/kg	<0.5	-	-	-	-
Fenitrothion	0.5	mg/kg	<0.5	-	-	-	-
Fenthion	0.5	mg/kg	<0.5	-	-	-	-

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Accredited for compliance with ISO/IEC 17025

Accreditation Number: 1645

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: Emily Burke

Project	**08ENME0009483**
Client Reference	3106004
	Werribee Area 4
Order Number	21190
Received Date	15/04/2008 03:13:00 PM

Customer Sample ID			**4A/QS-4A**	**4A/QS-5A**	**4A/QS-6A**	**4A/QS-8A**	**4A/QS-10A**
Amdel Sample Number			**953151**	**953152**	**953153**	**953154**	**953155**
Date Sampled			**09/04/2008**	**10/04/2008**	**11/04/2008**	**11/04/2008**	**08/04/2008**
VOC							
Test/Reference	PQL	Unit					
1100 TPH (C6-C9) in Soil by P&T							
C6-C9 Fraction	5	mg/kg	-	<5.0	-	-	-
4-Bromofluorobenzene - Surrogate	-	%	-	81	-	-	-
SVOC							
Test/Reference	PQL	Unit					
2300 OC Pesticides in Soil by GC-ECD							
a-BHC	0.5	mg/kg	<0.5	-	-	-	-
a-Chlordane	0.5	mg/kg	<0.5	-	-	-	-
a-Endosulfan	0.5	mg/kg	<0.5	-	-	-	-
Aldrin	0.5	mg/kg	<0.5	-	-	-	-
b-BHC	0.5	mg/kg	<0.5	-	-	-	-
b-Endosulfan	0.5	mg/kg	<0.5	-	-	-	-
d-BHC	0.5	mg/kg	<0.5	-	-	-	-
DDD	0.5	mg/kg	<0.5	-	-	-	-
DDE	0.5	mg/kg	<0.5	-	-	-	-
DDT	0.5	mg/kg	<0.5	-	-	-	-
Dieldrin	0.5	mg/kg	<0.5	-	-	-	-
Endosulfan sulfate	0.5	mg/kg	<0.5	-	-	-	-
Endrin	0.5	mg/kg	<0.5	-	-	-	-
Endrin Aldehyde	0.5	mg/kg	<0.5	-	-	-	-
g-BHC	0.5	mg/kg	<0.5	-	-	-	-
g-Chlordane	0.5	mg/kg	<0.5	-	-	-	-
Heptachlor	0.5	mg/kg	<0.5	-	-	-	-
Heptachlor epoxide	0.5	mg/kg	<0.5	-	-	-	-
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	-	-	-	-
Methoxychlor	0.5	mg/kg	<0.5	-	-	-	-
Oxychlordane	0.5	mg/kg	<0.5	-	-	-	-
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	100	-	-	-	-
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	-	-	-	-
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	-	-	-	-
Diazinon	0.5	mg/kg	<0.5	-	-	-	-
Ethion	0.5	mg/kg	<0.5	-	-	-	-
Fenitrothion	0.5	mg/kg	<0.5	-	-	-	-
Fenthion	0.5	mg/kg	<0.5	-	-	-	-

Customer Sample ID			4A/QS-4A	4A/QS-5A	4A/QS-6A	4A/QS-8A	4A/QS-10A
Amdel Sample Number			953151	953152	953153	953154	953155
Date Sampled			09/04/2008	10/04/2008	11/04/2008	11/04/2008	08/04/2008
SVOC							
Test/Reference	PQL	Unit					
Malathion	0.5	mg/kg	<0.5	-	-	-	-
Methyl Parathion	0.5	mg/kg	<0.5	-	-	-	-
Parathion	0.5	mg/kg	<0.5	-	-	-	-
Ronnel	0.5	mg/kg	<0.5	-	-	-	-
Triphenyl Phosphate - OPP SURROGATE	1	%	103	-	-	-	-
2100 PAH in Soil by GC							
Acenaphthene	0.5	mg/kg	-	<0.5	-	-	-
Acenaphthylene	0.5	mg/kg	-	<0.5	-	-	-
Anthracene	0.5	mg/kg	-	<0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	-	<0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	-	<0.5	-	-	-
Benzo(b)&(k)fluoranthene	1	mg/kg	-	<1	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	<0.5	-	-	-
Chrysene	0.5	mg/kg	-	<0.5	-	-	-
Dibenz(ah)anthracene	0.5	mg/kg	-	<0.5	-	-	-
Fluoranthene	0.5	mg/kg	-	<0.5	-	-	-
Fluorene	0.5	mg/kg	-	<0.5	-	-	-
Indeno(123-cd)pyrene	0.5	mg/kg	-	<0.5	-	-	-
Naphthalene	0.5	mg/kg	-	<0.5	-	-	-
Phenanthrene	0.5	mg/kg	-	<0.5	-	-	-
Pyrene	0.5	mg/kg	-	<0.5	-	-	-
Sum of PAHs	0.5	mg/kg	-	<0.5	-	-	-
2-Fluorobiphenyl - Surrogate	-	%	-	98	-	-	-
p-Terphenyl-D14 - Surrogate	-	%	-	120	-	-	-
Anthracene-d10 - Surrogate	-	%	-	102	-	-	-
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	10	mg/kg	-	<10	-	-	-
C15-C28 Fraction	20	mg/kg	-	<20	-	-	-
C29-C36 Fraction	20	mg/kg	-	<20	-	-	-
Metals							
Test/Reference	PQL	Unit					
3400 Mercury in Soil by FIMS							
Mercury	0.01	mg/kg	-	0.02	-	-	-
3100 Total Metals in Soil By ICP/MS							
Antimony	2	mg/kg	-	<2	-	-	-
Arsenic	2	mg/kg	-	6.6	-	-	-
Barium	2	mg/kg	-	170	-	-	-
Beryllium	2	mg/kg	-	<2	-	-	-
Boron	2	mg/kg	-	5.2	-	-	-
Cadmium	2	mg/kg	-	<2	-	-	-
Chromium	2	mg/kg	-	61	-	-	-
Cobalt	2	mg/kg	-	18	-	-	-
Copper	2	mg/kg	-	20	-	-	-
Lead	2	mg/kg	-	15	-	-	-
Manganese	2	mg/kg	-	390	-	-	-
Molybdenum	2	mg/kg	-	<2	-	-	-
Nickel	2	mg/kg	-	44	-	-	-
Selenium	2	mg/kg	-	<2	-	-	-
Tin	2	mg/kg	-	<2	-	-	-

Customer Sample ID			**4A/QS-4A**	**4A/QS-5A**	**4A/QS-6A**	**4A/QS-8A**	**4A/QS-10A**
Amdel Sample Number			**953151**	**953152**	**953153**	**953154**	**953155**
Date Sampled			**09/04/2008**	**10/04/2008**	**11/04/2008**	**11/04/2008**	**08/04/2008**
Metals							
Test/Reference	PQL	Unit					
Vanadium	2	mg/kg	-	45	-	-	-
Zinc	2	mg/kg	-	49	-	-	-
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	7	8	-	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Extracted	Analysed
1100 TPH (C6-C9) in Soil by P&T	17/04/2008	22/04/2008
2000 TPH (C10 - C36) in Soil by GC	16/04/2008	18/04/2008
2100 PAH in Soil by GC	16/04/2008	18/04/2008
2300 OC Pesticides in Soil by GC-ECD	16/04/2008	18/04/2008
2400 OP Pesticides in Soil by GC	16/04/2008	18/04/2008
3100 Total Metals in Soil By ICP/MS	22/04/2008	23/04/2008
3400 Mercury in Soil by FIMS	22/04/2008	22/04/2008
5000 Moisture Content		17/04/2008

Amdel Ltd 1868 Dandenong Rd Clayton VIC Australia 3168
ABN: 30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278

Amdel Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Amdel QC Acceptance/Rejection criteria are available on request.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quotes PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (Form LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE**: pH duplicates are reported as a range NOT an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
963917 [Method Blank]							
3100 Metals in Soil - As Received							
Antimony	mg/kg	<2			< 2	T	
Arsenic	mg/kg	<2			< 2	T	
Barium	mg/kg	<2			< 2	T	
Beryllium	mg/kg	<2			< 2	T	
Cadmium	mg/kg	<2			< 2	T	
Chromium	mg/kg	<2			< 2	T	
Cobalt	mg/kg	<2			< 2	T	
Copper	mg/kg	<2			< 2	T	
Lead	mg/kg	<2			< 2	T	
Manganese	mg/kg	<2			< 2	T	
Molybdenum	mg/kg	<2			< 2	T	
Nickel	mg/kg	<2			< 2	T	
Selenium	mg/kg	<2			< 2	T	
Tin	mg/kg	<2			< 2	T	
Vanadium	mg/kg	<2			< 2	T	
Zinc	mg/kg	<2			< 2	T	
964224 [Method Blank]							
3400 Mercury in Soil by FIMS							
Mercury	mg/kg	<0.01			< 0.01	T	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
963918 [Laboratory Control Sample]							
3100 Metals in Soil - As Received			Expected Value	Percent Recovery			
Antimony	mg/kg	97	100.0	97	70-130 %	T	
Arsenic	mg/kg	96	100.0	96	70-130 %	T	
Barium	mg/kg	100	100.0	101	70-130 %	T	
Cadmium	mg/kg	98	100.0	98	70-130 %	T	
Chromium	mg/kg	100	100.0	104	70-130 %	T	
Cobalt	mg/kg	110	100.0	110	70-130 %	T	
Copper	mg/kg	99	100.0	99	70-130 %	T	
Lead	mg/kg	110	100.0	107	70-130 %	T	
Manganese	mg/kg	110	100.0	107	70-130 %	T	
Molybdenum	mg/kg	110	100.0	110	70-130 %	T	
Nickel	mg/kg	110	100.0	106	70-130 %	T	
Selenium	mg/kg	92	100.0	92	70-130 %	T	
Tin	mg/kg	110	100.0	109	70-130 %	T	
Vanadium	mg/kg	110	100.0	109	70-130 %	T	
Zinc	mg/kg	91	100.0	91	70-130 %	T	
964225 [Laboratory Control Sample]							
3400 Mercury in Soil by FIMS			Expected Value	Percent Recovery			
Mercury	mg/kg	9.9	10.0	99	80-120 %	T	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
953214 [Method Blank]							
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	mg/kg	<10			< 10	T	
C15-C28 Fraction	mg/kg	<20			< 20	T	
C29-C36 Fraction	mg/kg	<20			< 20	T	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
953216 [Method Blank]							
2100 PAH in Soil by GC							
Acenaphthene	mg/kg	<0.5			< 0.5	T	
Acenaphthylene	mg/kg	<0.5			< 0.5	T	
Anthracene	mg/kg	<0.5			< 0.5	T	
Benz(a)anthracene	mg/kg	<0.5			< 0.5	T	
Benzo(a)pyrene	mg/kg	<0.5			< 0.5	T	
Benzo(b)&(k)fluoranthene	mg/kg	<1			< 1	T	
Benzo(g.h.i)perylene	mg/kg	<0.5			< 0.5	T	
Chrysene	mg/kg	<0.5			< 0.5	T	
Dibenz(ah)anthracene	mg/kg	<0.5			< 0.5	T	
Fluoranthene	mg/kg	<0.5			< 0.5	T	
Fluorene	mg/kg	<0.5			< 0.5	T	
Indeno(123-cd)pyrene	mg/kg	<0.5			< 0.5	T	
Naphthalene	mg/kg	<0.5			< 0.5	T	
Phenanthrene	mg/kg	<0.5			< 0.5	T	
Pyrene	mg/kg	<0.5			< 0.5	T	
Sum of PAHs	mg/kg	<0.5			< 0.5	T	
2-Fluorobiphenyl - Surrogate	%	96			70-130 %	T	
Anthracene-d10 - Surrogate	%	98			70-130 %	T	
p-Terphenyl-D14 - Surrogate	%	118			70-130 %	T	
2300 OC Pesticides in Soil by GC-ECD							
a-BHC	mg/kg	<0.5			< 0.5	T	
a-Chlordane	mg/kg	<0.5			< 0.5	T	
a-Endosulfan	mg/kg	<0.5			< 0.5	T	
Aldrin	mg/kg	<0.5			< 0.5	T	
b-BHC	mg/kg	<0.5			< 0.5	T	
b-Endosulfan	mg/kg	<0.5			< 0.5	T	
d-BHC	mg/kg	<0.5			< 0.5	T	
DDD	mg/kg	<0.5			< 0.5	T	
DDE	mg/kg	<0.5			< 0.5	T	
DDT	mg/kg	<0.5			< 0.5	T	
Dieldrin	mg/kg	<0.5			< 0.5	T	
Endosulfan sulfate	mg/kg	<0.5			< 0.5	T	
Endrin	mg/kg	<0.5			< 0.5	T	
Endrin Aldehyde	mg/kg	<0.5			< 0.5	T	
g-BHC	mg/kg	<0.5			< 0.5	T	
g-Chlordane	mg/kg	<0.5			< 0.5	T	
Heptachlor	mg/kg	<0.5			< 0.5	T	
Heptachlor epoxide	mg/kg	<0.5			< 0.5	T	
Hexachlorobenzene (HCB)	mg/kg	<0.5			< 0.5	T	
Methoxychlor	mg/kg	<0.5			< 0.5	T	
Oxychlordane	mg/kg	<0.5			< 0.5	T	
2.4.5.6-tetrachloro-m-xylene-SURROGATE	%	98			70-130 %	T	
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	mg/kg	<0.5			< 0.5	T	
Chlorpyrifos Methyl	mg/kg	<0.5			< 0.5	T	
Diazinon	mg/kg	<0.5			< 0.5	T	
Ethion	mg/kg	<0.5			< 0.5	T	
Fenitrothion	mg/kg	<0.5			< 0.5	T	
Fenthion	mg/kg	<0.5			< 0.5	T	
Malathion	mg/kg	<0.5			< 0.5	T	
Methyl Parathion	mg/kg	<0.5			< 0.5	T	
Parathion	mg/kg	<0.5			< 0.5	T	
Ronnel	mg/kg	<0.5			< 0.5	T	
Triphenyl Phosphate - OPP SURROGATE	%	98			70-130 %	T	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
953215 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	110	125.0	88	70-130 %	T	
C15-C28 Fraction	mg/kg	130	125.0	102	70-130 %	T	
C29-C36 Fraction	mg/kg	110	125.0	92	70-130 %	T	

Sample Integrity

Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Alex Petridis	Senior Analyst - SVOC	
Vanda Dabkowski	Customer Service Leader	
Mark Herbstreit	Senior Analyst - Metals	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Khoa Pham	Analyst - VOC	Accreditation Number: 1645
Olga Alieva	Analyst - SVOC	Accreditation Number: 1645

Laboratory Manager

Anthony Crane — Operations Manager

Final Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Amdel staff.

CHAIN OF CUSTODY & ANALYSIS REQUEST

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

Labmark Environmental
1868 Dandenong Road Clayton 3168
Paul Woodward
96868344

PROJECT # 3106004 | PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Emily burke
eburke@otek.com.au

LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: Q0228.EM | OTEK PO No.: 21190

REMARKS

PQLs Required (ug/L)

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	BTEX Std	TPH (C6-C36) Std	Pb Std	PAH Std	OCP/PCBs Std	PHENOLS Std	OCP/OPP Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VOH Std	ON HOLD
~~4A/QS-1A~~	-			X			X				10-Apr-08	1		X																				
~~4A/QS-2A~~	-			X			X					2		X	X	X	X																	
~~4A/QS-3A~~	-			X			X				10-Apr-08	1		X		X		X																
4A/QS-4A	-			X			X				9-Apr-08	1									X												
4A/QS-5A	-			X			X				10-Apr-08	1		X		X		X																
4A/QS-6A	-			X			X				11 Apr 08	1																					X
~~4A/QS-7A~~	-			X			X					1																					X
4A/QS-8A	-			X			X				11 April 08	1																					X
~~4A/QS-9A~~	-			X			X					1																					X
4A/QS-10A	-			X			X				8 April	1																					X
4A/QS-11A	-			X			X				11-Apr-08	1																					X
This Page				11			11					11		5	1	3	1	2			1												11

ANALYSIS REQUIRED

953151/08ENME0009483-1
OTEK_MLB-4A/QS-4A-16/04

Please forward samples to:
Labmark Environmental
1868 Dandenong Road
Clayton 3168

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

Relinquished by:	Date	Time	Received by:	Date	Time	Custody Seals Intact?
EJTS	14/4/08			14/4/08		
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?
			Michael Cassidy	15/4	15:15	

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Project Number: 3106004

Address: New Farm Road Werribee

Validation Conducted by: KJB

Signed & Dated: 18/05/2010

Primary Laboratory: ALS

Batch Number: EM0802745

Secondary Laboratory: Amdel

Batch Number: 08ENME0009483
08ENME0009756

Sample Matrix: (Shade)

Soil

Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
52	3	3	11

Have the Following Criteria Been Met? (Shade)

Blind Replicate	**OK if >5%**	11.538
Split Sample	**OK if >5%**	11.538
Blank Samples	**OK**	11

7 Rinsate
0 Field
4 Trip

Explain any Discrepancies:

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
3	**Number obtained**	**3**	
QS3, QS4, QS5	**Sample Identification**	**QS3A, QS4A, QS5A**	
115	**Total Number of Analytes**	99	**B**
0	**No. of analytes with RPD >50% (Fail)**	4	
115	**Number of analytes <50% (Pass)**	95	
100.0	**% Pass**	96.0	
A			

Explain any Discrepancies:

4A/QS-3A - 3 RPD exceedences for Chromium, Cobalt and Nickel with RPD's of 60%, 96% and 64% respectively.

4A/QS-5A - 1 RPD exceedence for Chromium with a RPD of 68%.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	4		7
Sample Identifictaion	TB-1, 2, 3, 4		RB-1, 2, 3, 4, 5, 6, 7,
Number of Analytes	39		78
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Validation Conducted by: KJB

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	91	3
	No. Fails	9	0
Analysis	**No. Passes**	105	3
	No. Fails	3	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	**F**	**G**
	Primary	**Secondary**
TOTAL # Analytes of DUP Samples	906	
# samples RPD >50% **(FAIL)**	0	
% Pass	100	

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

No data provided from Amdel

Method Blank Analysis (MB)	**H**	**I**
	Primary	**Secondary**
TOTAL # Analytes	491	102
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	**J**	**K**
	Primary	**Secondary**
TOTAL # Analytes	405	60
# analytes outside range i.e <70% or >130% **(FAIL)**	19	0
% Pass	95	100

Surrogates

OK (>95%)	98
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	**L**	**M**
	Primary	**Secondary**
TOTAL # Analytes	64	
# Analytes outside range i.e <70% or >130%	14	
% Pass	78	

Internal Spikes

OK (>95%)	78
NOT OK (<95%)	

Explanation for Failures:

No data provided from Amdel

Analytes from Total Metals, OCP, Phenolic Componds, PAH and TPH analysis fell outside the acceptable laboratory range for Matrix Spike Recovery of 70-130%.

FINAL DATA

	Sample Type	**Total Data Quality Objective Fails**	**Total Number of Results**	**% Data Quality Objective Passes**
A	**Primary Duplicates**	0	115	100.0
B	**Secondary Duplicates**	4	99	96.0
C	**Trip Blanks**	0	39	100.0
D	**Field Blanks**	0	0	-
E	**Rinsate Blanks**	0	78	100.0
F & G	**Lab Internal Duplicates**	0	906	100.0
H & I	**Lab Method Blanks**	0	593	100.0
J & K	**Lab Internal Spike Recoveries**	19	465	95.9
L & M	**Laboratory Spike Recoveries**	14	64	78.1
	Total	**37**	**2359**	**98.4**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

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Accredited for compliance with ISO/IEC 17025
Accreditation Number: 1645

Amended Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS ✓	FAIL

NAME (Print) CHRISTIAN Beasley
SIGNATURE Chr Beasley
DATE 13/10/08

Attention: T. Santwyk-Anderson

Project	**08ENME0009756**
Client Reference	3106004
	Werribee Area 4
Order Number	21190
Received Date	17/04/2008 12:43:00 PM

Customer Sample ID			**4A/QS-3A**	**4A/QS-7A**	**4A/QS-8A**	**4A/QS-9A**
Amdel Sample Number			**958484**	**958485**	**958486**	**958487**
Date Sampled			**10/04/2008**	**15/04/2008**	**15/04/2008**	**14/04/2008**
VOC						
Test/Reference	PQL	Unit				
1100 BTEX &(C6-C9) in Soil by P&T						
Benzene	0.2	mg/kg	<0.2	-	-	-
Ethylbenzene	1	mg/kg	<1.0	-	-	-
Meta- & Para- Xylene	2	mg/kg	<2.0	-	-	-
Ortho-Xylene	1	mg/kg	<1.0	-	-	-
Toluene	1	mg/kg	<1.0	-	-	-
Total Xylenes	3	mg/kg	<3.0	-	-	-
C6-C9 Fraction	5	mg/kg	<5.0	-	-	-
SVOC						
Test/Reference	PQL	Unit				
2100 PAH in Soil by GC						
Acenaphthene	0.5	mg/kg	<0.5	-	-	-
Acenaphthylene	0.5	mg/kg	<0.5	-	-	-
Anthracene	0.5	mg/kg	<0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	<0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	<0.5	-	-	-
Benzo(b)&(k)fluoranthene	1	mg/kg	<1	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5	-	-	-
Chrysene	0.5	mg/kg	<0.5	-	-	-
Dibenz(ah)anthracene	0.5	mg/kg	<0.5	-	-	-
Fluoranthene	0.5	mg/kg	<0.5	-	-	-
Fluorene	0.5	mg/kg	<0.5	-	-	-
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5	-	-	-
Naphthalene	0.5	mg/kg	<0.5	-	-	-
Phenanthrene	0.5	mg/kg	<0.5	-	-	-
Pyrene	0.5	mg/kg	<0.5	-	-	-
Sum of PAHs	0.5	mg/kg	<0.5	-	-	-
2-Fluorobiphenyl - Surrogate	-	%	92	-	-	-
p-Terphenyl-D14 - Surrogate	-	%	102	-	-	-
Anthracene-d10 - Surrogate	-	%	100	-	-	-
2000 TPH (C10 - C36) in Soil by GC						
C10-C14 Fraction	10	mg/kg	<10	-	-	-
C15-C28 Fraction	20	mg/kg	<20	-	-	-
C29-C36 Fraction	20	mg/kg	<20	-	-	-
Metals						
Test/Reference	PQL	Unit				

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Accreditation Number: 1645

Amended Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: T. Santwyk-Anderson

Project	**08ENME0009756**
Client Reference	3106004
	Werribee Area 4
Order Number	21190
Received Date	17/04/2008 12:43:00 PM

Customer Sample ID			**4A/QS-3A**	**4A/QS-7A**	**4A/QS-8A**	**4A/QS-9A**
Amdel Sample Number			**958484**	**958485**	**958486**	**958487**
Date Sampled			**10/04/2008**	**15/04/2008**	**15/04/2008**	**14/04/2008**
VOC						
Test/Reference	PQL	Unit				
1100 BTEX &(C6-C9) in Soil by P&T						
Benzene	0.2	mg/kg	<0.2	-	-	-
Ethylbenzene	1	mg/kg	<1.0	-	-	-
Meta- & Para- Xylene	2	mg/kg	<2.0	-	-	-
Ortho-Xylene	1	mg/kg	<1.0	-	-	-
Toluene	1	mg/kg	<1.0	-	-	-
Total Xylenes	3	mg/kg	<3.0	-	-	-
C6-C9 Fraction	5	mg/kg	<5.0	-	-	-
SVOC						
Test/Reference	PQL	Unit				
2100 PAH in Soil by GC						
Acenaphthene	0.5	mg/kg	<0.5	-	-	-
Acenaphthylene	0.5	mg/kg	<0.5	-	-	-
Anthracene	0.5	mg/kg	<0.5	-	-	-
Benz(a)anthracene	0.5	mg/kg	<0.5	-	-	-
Benzo(a)pyrene	0.5	mg/kg	<0.5	-	-	-
Benzo(b)&(k)fluoranthene	1	mg/kg	<1	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5	-	-	-
Chrysene	0.5	mg/kg	<0.5	-	-	-
Dibenz(ah)anthracene	0.5	mg/kg	<0.5	-	-	-
Fluoranthene	0.5	mg/kg	<0.5	-	-	-
Fluorene	0.5	mg/kg	<0.5	-	-	-
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5	-	-	-
Naphthalene	0.5	mg/kg	<0.5	-	-	-
Phenanthrene	0.5	mg/kg	<0.5	-	-	-
Pyrene	0.5	mg/kg	<0.5	-	-	-
Sum of PAHs	0.5	mg/kg	<0.5	-	-	-
2-Fluorobiphenyl - Surrogate	-	%	92	-	-	-
p-Terphenyl-D14 - Surrogate	-	%	102	-	-	-
Anthracene-d10 - Surrogate	-	%	100	-	-	-
2000 TPH (C10 - C36) in Soil by GC						
C10-C14 Fraction	10	mg/kg	<10	-	-	-
C15-C28 Fraction	20	mg/kg	<20	-	-	-
C29-C36 Fraction	20	mg/kg	<20	-	-	-
Metals						
Test/Reference	PQL	Unit				

Customer Sample ID			4A/QS-3A	4A/QS-7A	4A/QS-8A	4A/QS-9A
Amdel Sample Number			958484	958485	958486	958487
Date Sampled			10/04/2008	15/04/2008	15/04/2008	14/04/2008
Metals						
Test/Reference	PQL	Unit				
3400 Mercury in Soil by FIMS						
Mercury	0.01	mg/kg	<0.01	-	-	-
3100 Total Metals in Soil By ICP/MS						
Antimony	2	mg/kg	<2	-	-	-
Arsenic	2	mg/kg	5.6	-	-	-
Barium	2	mg/kg	41	-	-	-
Beryllium	2	mg/kg	<2	-	-	-
Boron	2	mg/kg	4.4	-	-	-
Cadmium	2	mg/kg	<2	-	-	-
Chromium	2	mg/kg	52	-	-	-
Cobalt	2	mg/kg	20	-	-	-
Copper	2	mg/kg	16	-	-	-
Lead	2	mg/kg	9.7	-	-	-
Manganese	2	mg/kg	200	-	-	-
Molybdenum	2	mg/kg	<2	-	-	-
Nickel	2	mg/kg	35	-	-	-
Selenium	2	mg/kg	<2	-	-	-
Tin	2	mg/kg	<2	-	-	-
Vanadium	2	mg/kg	53	-	-	-
Zinc	2	mg/kg	35	-	-	-
Miscellaneous						
Test/Reference	PQL	Unit				
5000 Moisture Content						
% Moisture	1	%	3	-	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Extracted	Analysed
1100 BTEX &(C6-C9) in Soil by P&T		27/04/2008
2000 TPH (C10 - C36) in Soil by GC	21/04/2008	22/04/2008
2100 PAH in Soil by GC	30/04/2008	01/05/2008
3100 Total Metals in Soil By ICP/MS	23/04/2008	24/04/2008
3400 Mercury in Soil by FIMS		24/04/2008
5000 Moisture Content		21/04/2008

Amdel Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Amdel QC Acceptance/Rejection criteria are available on request.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quotes PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (Form LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE**: pH duplicates are reported as a range NOT an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
967380 [Method Blank]							
3100 Metals in Soil - As Received							
Antimony	mg/kg	<2			< 2	T	
Arsenic	mg/kg	<2			< 2	T	
Barium	mg/kg	<2			< 2	T	
Beryllium	mg/kg	<2			< 2	T	
Cadmium	mg/kg	<2			< 2	T	
Chromium	mg/kg	<2			< 2	T	
Cobalt	mg/kg	<2			< 2	T	
Copper	mg/kg	<2			< 2	T	
Lead	mg/kg	<2			< 2	T	
Manganese	mg/kg	<2			< 2	T	
Molybdenum	mg/kg	<2			< 2	T	
Nickel	mg/kg	<2			< 2	T	
Selenium	mg/kg	<2			< 2	T	
Tin	mg/kg	<2			< 2	T	
Vanadium	mg/kg	<2			< 2	T	
Zinc	mg/kg	<2			< 2	T	
968337 [Method Blank]							
3400 Mercury in Soil by FIMS							
Mercury	mg/kg	<0.01			< 0.01	T	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
967381 [Laboratory Control Sample]							
3100 Metals in Soil - As Received			Expected Value	Percent Recovery			
Antimony	mg/kg	95	100.0	95	70-130 %	T	
Arsenic	mg/kg	97	100.0	97	70-130 %	T	
Barium	mg/kg	100	100.0	103	70-130 %	T	
Cadmium	mg/kg	100	100.0	103	70-130 %	T	
Chromium	mg/kg	110	100.0	110	70-130 %	T	
Cobalt	mg/kg	110	100.0	112	70-130 %	T	
Copper	mg/kg	100	100.0	100	70-130 %	T	
Lead	mg/kg	110	100.0	111	70-130 %	T	
Manganese	mg/kg	110	100.0	113	70-130 %	T	
Molybdenum	mg/kg	110	100.0	114	70-130 %	T	
Nickel	mg/kg	110	100.0	111	70-130 %	T	
Selenium	mg/kg	91	100.0	91	70-130 %	T	
Tin	mg/kg	120	100.0	115	70-130 %	T	
Vanadium	mg/kg	110	100.0	110	70-130 %	T	
Zinc	mg/kg	89	100.0	89	70-130 %	T	
968338 [Laboratory Control Sample]							
3400 Mercury in Soil by FIMS			Expected Value	Percent Recovery			
Mercury	mg/kg	9.1	10.0	91	80-120 %	T	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
960518 [Method Blank]							
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	mg/kg	<10			< 10	T	
C15-C28 Fraction	mg/kg	<20			< 20	T	
C29-C36 Fraction	mg/kg	<20			< 20	T	
975749 [Method Blank]							
2100 PAH in Soil by GC							
Acenaphthene	mg/kg	<0.5			< 0.5	T	
Acenaphthylene	mg/kg	<0.5			< 0.5	T	
Anthracene	mg/kg	<0.5			< 0.5	T	
Benz(a)anthracene	mg/kg	<0.5			< 0.5	T	
Benzo(a)pyrene	mg/kg	<0.5			< 0.5	T	
Benzo(b)&(k)fluoranthene	mg/kg	<1			< 1	T	
Benzo(g.h.i)perylene	mg/kg	<0.5			< 0.5	T	
Chrysene	mg/kg	<0.5			< 0.5	T	
Dibenz(ah)anthracene	mg/kg	<0.5			< 0.5	T	
Fluoranthene	mg/kg	<0.5			< 0.5	T	
Fluorene	mg/kg	<0.5			< 0.5	T	
Indeno(123-cd)pyrene	mg/kg	<0.5			< 0.5	T	
Naphthalene	mg/kg	<0.5			< 0.5	T	
Phenanthrene	mg/kg	<0.5			< 0.5	T	
Pyrene	mg/kg	<0.5			< 0.5	T	
Sum of PAHs	mg/kg	<0.5			< 0.5	T	
2-Fluorobiphenyl - Surrogate	%	98			70-130 %	T	
Anthracene-d10 - Surrogate	%	107			70-130 %	T	
p-Terphenyl-D14 - Surrogate	%	112			70-130 %	T	
960519 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	110	125.0	87	70-130 %	T	
C15-C28 Fraction	mg/kg	110	125.0	84	70-130 %	T	
C29-C36 Fraction	mg/kg	98	125.0	78	70-130 %	T	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
975750 [Laboratory Control Sample]							
2100 PAH in Soil by GC			Expected Value	Percent Recovery			
Acenaphthene	mg/kg	1.9	2.0	94	70-130 %	T	
Acenaphthylene	mg/kg	1.8	2.0	92	70-130 %	T	
Anthracene	mg/kg	2.0	2.0	100	70-130 %	T	
Benz(a)anthracene	mg/kg	1.9	2.0	95	70-130 %	T	
Benzo(a)pyrene	mg/kg	1.7	2.0	86	70-130 %	T	
Benzo(b)&(k)fluoranthene	mg/kg	7.0	N/A	N/A	N/A	N/A	
Benzo(g.h.i)perylene	mg/kg	1.8	2.0	88	70-130 %	T	
Chrysene	mg/kg	1.9	2.0	95	70-130 %	T	
Dibenz(ah)anthracene	mg/kg	1.8	2.0	89	70-130 %	T	
Fluoranthene	mg/kg	2.0	2.0	101	70-130 %	T	
Fluorene	mg/kg	1.8	2.0	92	70-130 %	T	
Indeno(123-cd)pyrene	mg/kg	1.8	2.0	89	70-130 %	T	
Naphthalene	mg/kg	1.9	2.0	95	70-130 %	T	
Phenanthrene	mg/kg	2.0	2.0	98	70-130 %	T	
Pyrene	mg/kg	1.9	2.0	95	70-130 %	T	
Sum of PAHs	mg/kg	33	32.0	104	70-130 %	T	
2-Fluorobiphenyl - Surrogate	%	96			70-130 %	T	
Anthracene-d10 - Surrogate	%	104			70-130 %	T	
p-Terphenyl-D14 - Surrogate	%	110			70-130 %	T	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
961600 [Method Blank]							
1100 BTEX in Soil by P&T							
Benzene	mg/kg	<0.2			< 0.2	T	
C6-C9 Fraction	mg/kg	<5			< 5	T	
Ethylbenzene	mg/kg	<1			< 1	T	
Meta- & Para- Xylene	mg/kg	<2			< 2	T	
Ortho-Xylene	mg/kg	<1			< 1	T	
Toluene	mg/kg	<1			< 1	T	
Total Xylenes	mg/kg	<3			< 3	T	
4-Bromofluorobenzene - Surrogate	%	98			70-130 %	T	
961601 [Laboratory Control Sample]							
1100 BTEX in Soil by P&T			Expected Value	Percent Recovery			
Benzene	mg/kg	4.7	5.0	94	70-130 %	T	
C6-C9 Fraction	mg/kg	50	50.0	100	70-130 %	T	
Ethylbenzene	mg/kg	4.8	5.0	95	70-130 %	T	
Meta- & Para- Xylene	mg/kg	9.7	10.0	97	70-130 %	T	
Ortho-Xylene	mg/kg	4.8	5.0	95	70-130 %	T	
Toluene	mg/kg	4.7	5.0	94	70-130 %	T	
Total Xylenes	mg/kg	14	N/A	N/A	N/A	N/A	
4-Bromofluorobenzene - Surrogate	%	97			70-130 %	T	

Sample Integrity

Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Ruth Callander — Client Services Officer

Alex Petridis	Senior Analyst - SVOC	Accreditation Number: 1645
Barry Blythman	Senior Analyst - VOC	Accreditation Number: 1645
Mark Herbstreit	Senior Analyst - Metals	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Olga Alieva	Analyst - SVOC	Accreditation Number: 1645

Laboratory Manager

Anthony Crane	Operations Manager	

Amended Report: PAH missed. This report replaces report number 297075.

- Indicates Not Requested * Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Amdel staff.

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

CHAIN OF CUSTODY & ANALYSIS REQUEST

Labmark Environmental
1868 Dandenong Road Clayton 3168
Paul Woodward
96868344

PROJECT # 3106004 | PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Emily burke
eburke@otek.com.au

LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: Q0228.EM | OTEK PO No.: 21190

REMARKS

PQLs Required (ug/L)

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	BTEX Std	TPH (C6-C36) Std	Pb Std	PAH Std	OCP/PCBs Std	PHENOLS Std	OCP/OPP Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	VCH Std	ON HOLD
~~4A/QS-1A~~	-			X			X				10-Apr-08	1		X																				
~~4A/QS-2A~~	-			X			X					2		X	X	X	X																	
4A/QS-3A	-			X			X				10-Apr-08	1		X		X		X																
~~4A/QS-4A~~	-			X			X				9-Apr-08	1									X													
~~4A/QS-5A~~	-			X			X				10-Apr-08	1		X		X		X																
~~4A/QS-6A~~	-			X			X					1																						X
4A/QS-7A	-			X			X				5 Apr	1																						X
4A/QS-8A	-			X			X					1																						X
4A/QS-9A	-			X			X				14 Apr	1																						X
~~4A/QS-10A~~	-			X			X					1																						X
~~4A/QS-11A~~	-			X			X				11-Apr-08	1																						X
This Page				11			11					11		5	1	3	1	2			1													11

Please forward samples to:
Labmark Environmental
1868 Dandenong Road
Clayton 3168

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT PLEASE

958484/08ENME0009756-1
OTEK_MLB-4A/QS-3A-18/04

Relinquished by:	Date	Time	Received by:	Date	Time	
	16.4.08					Custody Seals Intact?
Relinquished by:	Date	Time	Received by:	Date	Time	
						Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

MSC Labmark 17/4/08 12:45

DATA VALIDATION REPORT

Project Name:	Werribee Sub-Area 4A - Well Installation	**Validation Conducted by:**	CEC
Project Number:	3106004	**Signed & Dated:**	24/03/2011
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	LabMark	**Secondary Laboratory:**	NA	**Soil**
Batch Number:	09ENME0004793	**Batch Number:**	NA	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
13	1		1

Have the Following Criteria Been Met? (Shade)

				Explain any Discrepancies:
Blind Replicate	**OK if >5%**	7.6923	**NOT OK if <5%**	
Split Sample	**OK if >5%**	0	**NOT OK if <5%**	QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.
Blank Samples	**OK**	1	**NOT OK**	Field blank sampling has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

Rinsate
Field
1 Trip

Refer to OTEK QA/QC results table

	Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	1	**Number obtained**	0	
	4A/B-8/QS-1	**Sample Identification**		
A	18	**Total Number of Analytes**		B
	0	**No. of analytes with RPD >50% (Fail)**		
	18	**Number of analytes <50% (Pass)**		
	100.0	**% Pass**	#DIV/0!	

Explain any Discrepancies:

No Field split QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	1		
Sample Identifictaion	4A/B-8/TB-1		
Number of Analytes	18		
No. Analytes >PQL **(FAIL)**	0		
% Pass	100.00		#DIV/0!
	C	**D**	**E**

Explain any Discrepancies:

Rinsate blank sampling has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	16	
	No. Fails	0	
Analysis	**No. Passes**	18	
	No. Fails	0	

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

DATA VALIDATION REPORT

Project Name: Werribee Sub-Area 4A - Well Installation

Validation Conducted by: CEC

Section 3: **Laboratory Data Quality - Refer to Certificate of Analysis**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	192	
# samples RPD >50% **(FAIL)**	0	
% Pass	100	#DIV/0!

Laboratory Duplicate RPDs

OK (>95%)	#####
NOT OK (<95%)	

Explanation for Failures:

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	225	
# Analytes with RPD >PQL **(FAIL)**	0	
% Pass	100	#DIV/0!

Method Blanks

OK (>95%)	#####
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	164	
# analytes outside range i.e <70% or >130% **(FAIL)**	1	
% Pass	99	#DIV/0!

Surrogates

OK (>95%)	#####
NOT OK (<95%)	

Explanation for Failures:

1 analytes with LCS outside 70%-130% range for Phenols

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	98	
# Analytes outside range i.e <70% or >130%	2	
% Pass	98	#DIV/0!

Internal Spikes

OK (>95%)	#####
NOT OK (<95%)	

Explanation for Failures:

2 Analytes outside 70%-130% range for phenols

FINAL DATA

	Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
A	Primary Duplicates	0	18	100.0
B	Secondary Duplicates	0	0	0.0
C	Trip Blanks	0	18	100.0
D	Field Blanks	0	0	-
E	Rinsate Blanks	0	0	0.0
F & G	Lab Internal Duplicates	0	192	100.0
H & I	Lab Method Blanks	0	225	100.0
J & K	Lab Internal Spike Recoveries	1	164	99.4
L & M	Laboratory Spike Recoveries	2	98	98.0
	Total	**3**	**715**	**99.6**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025
Accreditation Number: 1645

LabMark
ENVIRONMENTAL LABORATORIES

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

OTEK Australia
INSPECTION VERIFICATION RECORD
PASS ✓ FAIL
NAME (Print) CATHERINE GILLY
SIGNATURE
DATE 25/03/11

Attention: Christian Beasley

Project	**09ENME0004793**
Client Reference	3106004
	Werribee Area 4A ESA
Order Number	35500
Received Date	10/02/2009 01:23:00 PM

Customer Sample ID			**4A/B-8/0.25**	**4A/B-8/0.5**	**4A/B-8/1.0**	**4A/B-8/2.0**	**4A/B-8/3.0**
Sample Matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Labmark Sample No.			**1401593**	**1401594**	**1401595**	**1401596**	**1401597**
Date Sampled			**09/02/2009**	**09/02/2009**	**09/02/2009**	**09/02/2009**	**09/02/2009**
Test/Reference	PQL	Unit					
0000 Total Fluoride							
Total Fluoride	50	mg/kg	140	-	-	-	-
VOC							
Test/Reference	PQL	Unit					
1100 TPH (C6-C9) in Soil by P&T							
4-Bromofluorobenzene - Surrogate	-	%	105	96	115	103	115
C6-C9 Fraction	5	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0
1300 VOCs in Soil by P&T							
Pentafluorobenzene-Surrogate	1	%	73	-	-	-	-
Toluene-D8 - Surrogate	1	%	93	-	-	-	-
4-Bromofluorobenzene - Surrogate	1	%	85	-	-	-	-
Dichlorodifluoromethane	1	mg/kg	<1.0	-	-	-	-
Chloromethane	1	mg/kg	<1.0	-	-	-	-
Vinyl Chloride	1	mg/kg	<1.0	-	-	-	-
Bromomethane	1	mg/kg	<1.0	-	-	-	-
Chloroethane	1	mg/kg	<1.0	-	-	-	-
Trichlorofluoromethane	1	mg/kg	<1.0	-	-	-	-
1,1-Dichloroethene	1	mg/kg	<1.0	-	-	-	-
Methylene Chloride	5	mg/kg	<5.0	-	-	-	-
trans-1,2-Dichloroethene	1	mg/kg	<1.0	-	-	-	-
1,1-Dichloroethane	1	mg/kg	<1.0	-	-	-	-
2-butanone	10	mg/kg	<10.0	-	-	-	-
cis-1,2-Dichloroethene	1	mg/kg	<1.0	-	-	-	-
Bromochloromethane	1	mg/kg	<1.0	-	-	-	-
Chloroform	1	mg/kg	<1.0	-	-	-	-
2,2-Dichloropropane	10	mg/kg	<10.0	-	-	-	-
1,2-Dichloroethane	1	mg/kg	<1.0	-	-	-	-
1,1,1-Trichloroethane	1	mg/kg	<1.0	-	-	-	-
1,1-Dichloropropylene	1	mg/kg	<1.0	-	-	-	-
Carbon Tetrachloride	1	mg/kg	<1.0	-	-	-	-
Benzene	0.2	mg/kg	<0.2	-	-	-	-
Dibromomethane	1	mg/kg	<1.0	-	-	-	-
1,2-Dichloropropane	1	mg/kg	<1.0	-	-	-	-
Trichloroethene	1	mg/kg	<1.0	-	-	-	-
Bromodichloromethane	1	mg/kg	<1.0	-	-	-	-

Customer Sample ID			4A/B-8/0.25	4A/B-8/0.5	4A/B-8/1.0	4A/B-8/2.0	4A/B-8/3.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1401593	1401594	1401595	1401596	1401597
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
VOC							
Test/Reference	PQL	Unit					
cis-1,3-Dichloropropene	1	mg/kg	<1.0	-	-	-	-
4-methyl-2-pentanone	10	mg/kg	<10.0	-	-	-	-
trans-1,3-Dichloropropene	1	mg/kg	<1.0	-	-	-	-
1,1,2-Trichloroethane	1	mg/kg	<1.0	-	-	-	-
Toluene	1	mg/kg	<1.0	-	-	-	-
1,3-Dichloropropane	1	mg/kg	<1.0	-	-	-	-
Dibromochloromethane	1	mg/kg	<1.0	-	-	-	-
1,2-Dibromoethane	1	mg/kg	<1.0	-	-	-	-
Tetrachloroethene	1	mg/kg	<1.0	-	-	-	-
1,1,1,2-Tetrachloroethane	1	mg/kg	<1.0	-	-	-	-
Chlorobenzene	1	mg/kg	<1.0	-	-	-	-
Ethylbenzene	1	mg/kg	<1.0	-	-	-	-
Meta- & Para- Xylene	2	mg/kg	<2.0	-	-	-	-
Bromoform	1	mg/kg	<1.0	-	-	-	-
Styrene	0.5	mg/kg	<0.5	-	-	-	-
1,1,2,2-Tetrachloroethane	1	mg/kg	<1.0	-	-	-	-
Ortho-Xylene	1	mg/kg	<1.0	-	-	-	-
1,2,3-Trichloropropane	1	mg/kg	<1.0	-	-	-	-
Isopropylbenzene	0.5	mg/kg	<0.5	-	-	-	-
Bromobenzene	1	mg/kg	<1.0	-	-	-	-
n-Propylbenzene	1	mg/kg	<1.0	-	-	-	-
2-Chlorotoluene	1	mg/kg	<1.0	-	-	-	-
4-Chlorotoluene	1	mg/kg	<1.0	-	-	-	-
1,3,5-Trimethylbenzene	1	mg/kg	<1.0	-	-	-	-
Pentachloroethane	1	mg/kg	<1.0	-	-	-	-
tert-Butylbenzene	1	mg/kg	<1.0	-	-	-	-
1,2,4-Trimethylbenzene	1	mg/kg	<1.0	-	-	-	-
sec-Butylbenzene	1	mg/kg	<1.0	-	-	-	-
1,3-Dichlorobenzene	1	mg/kg	<1.0	-	-	-	-
1,4-Dichlorobenzene	1	mg/kg	<1.0	-	-	-	-
p-Isopropyltoluene	1	mg/kg	<1.0	-	-	-	-
1,2-Dichlorobenzene	1	mg/kg	<1.0	-	-	-	-
n-Butylbenzene	1	mg/kg	<1.0	-	-	-	-
1,2-Dibromo-3-chloropropane	1	mg/kg	<1.0	-	-	-	-
Hexachloroethane	1	mg/kg	<1.0	-	-	-	-
1,2,4-Trichlorobenzene	1	mg/kg	<1.0	-	-	-	-
Naphthalene	1	mg/kg	<1.0	-	-	-	-
Hexachlorobutadiene	1	mg/kg	<1.0	-	-	-	-
1,2,3-Trichlorobenzene	1	mg/kg	<1.0	-	-	-	-
Total Xylenes	3	mg/kg	<3.0	-	-	-	-
SVOC							
Test/Reference	PQL	Unit					
2920 Phenoxy Herbicides in Soil by HPLC							
2,4,5-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenoxy-propanoic acDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenoxy propanoic acidDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5

Customer Sample ID			4A/B-8/0.25	4A/B-8/0.5	4A/B-8/1.0	4A/B-8/2.0	4A/B-8/3.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1401593	1401594	1401595	1401596	1401597
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
SVOC							
Test/Reference	PQL	Unit					
2,4-Dichlorophenoxy-acetic acid (24DB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenoxy-butanoic acid (DB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
2-Chlorophenoxy acetic acid (2-CPDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
2-Methyl-4-chlorophenoxy-acetic acDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
2-Methyl-4-chlorophenoxy butanoic aDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
4-Chlorophenoxy acetic acidDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
DicambaDB	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDD	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDE	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDT	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Oxychlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	112	114	114	112	110
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos Methyl	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Diazinon	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Ethion	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Fenitrothion	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Fenthion	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Malathion	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Methyl Parathion	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Parathion	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Ronnel	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Triphenyl Phosphate - OPP SURROGATE	1	%	-	108	102	106	103
2100 PAH in Soil by GC							
Acenaphthene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Customer Sample ID			4A/B-8/0.25	4A/B-8/0.5	4A/B-8/1.0	4A/B-8/2.0	4A/B-8/3.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1401593	1401594	1401595	1401596	1401597
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
SVOC							
Test/Reference	PQL	Unit					
Benzo(a)pyrene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	1	mg/kg	<1	<1	<1	<1	<1
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(ah)anthracene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of PAHs	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Fluorobiphenyl - Surrogate	-	%	98	105	102	99	95
p-Terphenyl-D14 - Surrogate	-	%	106	110	110	110	108
Anthracene-d10 - Surrogate	-	%	106	110	110	108	104
2600 PCBs in Soil by GC							
Aroclor 1016DB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor 1221DB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor 1232 and 1242 as totalDB	1	mg/kg	<1	<1	<1	<1	<1
Aroclor 1248 and 1254 as totalDB	1	mg/kg	<1	<1	<1	<1	<1
Aroclor 1260DB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Polychlorinated biphenylsDB	1	mg/kg	<1	<1	<1	<1	<1
Decachlorobiphenyl - PCB surrogate	1	%	110	114	110	110	108
2800 Individual Phenols in Soil by GC							
2,3,4,6-Tetrachlorophenol	1	mg/kg	<1	<1	<1	<1	<1
2,3,4-Trichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,3,5,6-Tetrachlorophenol	1	mg/kg	<1	<1	<1	<1	<1
2,3,5-Trichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,3,6-Trichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,3-Dichlorophenol	1	mg/kg	<1	<1	<1	<1	<1
2,4 & 2,5-Dichlorophenol	2	mg/kg	<2	<2	<2	<2	<2
2,4,6-Trichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3,4-Dichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3,5-Dichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3-Chlorophenol & 4-Chlorophenol	1	mg/kg	<1	<1	<1	<1	<1
3-Methylphenol & 4-Methylphenol	1	mg/kg	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	1	mg/kg	<1	<1	<1	<1	<1
Phenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Tribromophenol-Surrogate	1	%	73	72	66	50	68
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Butyl benzyl phthalate	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Dibutyl phthalate	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Diethyl phthalate	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Dimethyl phthalate	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5

Customer Sample ID			4A/B-8/0.25	4A/B-8/0.5	4A/B-8/1.0	4A/B-8/2.0	4A/B-8/3.0
Sample Matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Labmark Sample No.			**1401593**	**1401594**	**1401595**	**1401596**	**1401597**
Date Sampled			**09/02/2009**	**09/02/2009**	**09/02/2009**	**09/02/2009**	**09/02/2009**
SVOC							
Test/Reference	PQL	Unit					
Di-n-octyl phthalate	0.5	mg/kg	-	<0.5	<0.5	<0.5	<0.5
Total Phthalate	3.0	mg/kg	-	<3.0	<3.0	<3.0	<3.0
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	10	mg/kg	<10	<10	<10	<10	<10
C15-C28 Fraction	20	mg/kg	<20	<20	<20	<20	<20
C29-C36 Fraction	20	mg/kg	<20	<20	<20	<20	<20
Metals							
Test/Reference	PQL	Unit					
3400 Mercury in Soil by FIMS							
Mercury	0.01	mg/kg	0.04	0.02	0.01	0.02	0.02
3100 Total Metals in Soil By ICP/MS							
Antimony	2	mg/kg	-	<2	<2	<2	<2
Arsenic	2	mg/kg	5.5	5.4	5.8	4.9	4.7
Barium	2	mg/kg	-	86	41	75	59
Beryllium	2	mg/kg	-	<2	<2	<2	<2
Boron	2	mg/kg	-	8.0	9.5	8.2	7.8
Cadmium	2	mg/kg	<2	<2	<2	<2	<2
Chromium	2	mg/kg	50	37	37	35	33
Cobalt	2	mg/kg	-	14	14	11	20
Copper	2	mg/kg	20	18	19	18	19
Lead	2	mg/kg	13	11	11	13	14
Manganese	2	mg/kg	-	310	320	240	750
Molybdenum	2	mg/kg	<2	<2	<2	<2	<2
Nickel	2	mg/kg	32	33	32	26	52
Selenium	2	mg/kg	<2	<2	<2	<2	<2
Tin	2	mg/kg	<2	<2	<2	<2	<2
Vanadium	2	mg/kg	-	32	29	28	34
Zinc	2	mg/kg	42	43	45	40	31
Inorganics							
Test/Reference	PQL	Unit					
4230 Hexavalent Chromium in Soil							
Chromium (VI)	1	mg/kg	<1	-	-	-	-
4270 Total Cyanide in Soil Colourmetric							
Total Cyanide	0.1	mg/kg	0.2	-	-	-	-
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	7	8	11	11	10

Customer Sample ID			4A/B-8/4.0	4A/B-8/5.0	4A/B-8/6.0	4A/B-8/7.0	4A/B-8/8.0
Sample Matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Labmark Sample No.			**1401598**	**1401599**	**1401600**	**1401601**	**1401602**
Date Sampled			**09/02/2009**	**09/02/2009**	**09/02/2009**	**09/02/2009**	**09/02/2009**
VOC							
Test/Reference	PQL	Unit					
1100 TPH (C6-C9) in Soil by P&T							
4-Bromofluorobenzene - Surrogate	-	%	114	109	109	120	111
C6-C9 Fraction	5	mg/kg	<5.0	<5.0	<5.0	<5.0	<5.0

Customer Sample ID			4A/B-8/4.0	4A/B-8/5.0	4A/B-8/6.0	4A/B-8/7.0	4A/B-8/8.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1401598	1401599	1401600	1401601	1401602
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
SVOC							
Test/Reference	PQL	Unit					
2920 Phenoxy Herbicides in Soil by HPLC							
2,4,5-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenoxy-propanoic acDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenoxy propanoic acidDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenoxy-acetic acid (24DB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenoxy-butanoic acid (DB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenoxy acetic acid (2-CPDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methyl-4-chlorophenoxy-acetic acDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methyl-4-chlorophenoxy butanoic aDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorophenoxy acetic acidDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DicambaDB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
a-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
b-Endosulfan	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
d-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDD	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDE	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
DDT	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endosulfan sulfate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Endrin Aldehyde	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-BHC	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
g-Chlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor epoxide	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Oxychlordane	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	110	107	108	111	121
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fenthion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Malathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Methyl Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Parathion	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ronnel	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Customer Sample ID			4A/B-8/4.0	4A/B-8/5.0	4A/B-8/6.0	4A/B-8/7.0	4A/B-8/8.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1401598	1401599	1401600	1401601	1401602
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
SVOC							
Test/Reference	PQL	Unit					
Triphenyl Phosphate - OPP SURROGATE	1	%	103	104	101	104	116
2100 PAH in Soil by GC							
Acenaphthene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	1	mg/kg	<1	<1	<1	<1	<1
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(ah)anthracene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of PAHs	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Fluorobiphenyl - Surrogate	-	%	96	96	94	93	100
p-Terphenyl-D14 - Surrogate	-	%	107	106	106	106	120
Anthracene-d10 - Surrogate	-	%	105	104	102	107	114
2600 PCBs in Soil by GC							
Aroclor 1016DB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor 1221DB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Aroclor 1232 and 1242 as totalDB	1	mg/kg	<1	<1	<1	<1	<1
Aroclor 1248 and 1254 as totalDB	1	mg/kg	<1	<1	<1	<1	<1
Aroclor 1260DB	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Polychlorinated biphenylsDB	1	mg/kg	<1	<1	<1	<1	<1
Decachlorobiphenyl - PCB surrogate	1	%	106	108	105	108	116
2800 Individual Phenols in Soil by GC							
2,3,4,6-Tetrachlorophenol	1	mg/kg	<1	<1	<1	<1	<1
2,3,4-Trichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,3,5,6-Tetrachlorophenol	1	mg/kg	<1	<1	<1	<1	<1
2,3,5-Trichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,3,6-Trichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,3-Dichlorophenol	1	mg/kg	<1	<1	<1	<1	<1
2,4 & 2,5-Dichlorophenol	2	mg/kg	<2	<2	<2	<2	<2
2,4,6-Trichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3,4-Dichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3,5-Dichlorophenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3-Chlorophenol & 4-Chlorophenol	1	mg/kg	<1	<1	<1	<1	<1
3-Methylphenol & 4-Methylphenol	1	mg/kg	<1	<1	<1	<1	<1
4-Chloro-3-methylphenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	1	mg/kg	<1	<1	<1	<1	<1
Phenol	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Tribromophenol-Surrogate	1	%	70	56	59	50	56

Customer Sample ID			4A/B-8/4.0	4A/B-8/5.0	4A/B-8/6.0	4A/B-8/7.0	4A/B-8/8.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1401598	1401599	1401600	1401601	1401602
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
SVOC							
Test/Reference	PQL	Unit					
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Butyl benzyl phthalate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibutyl phthalate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Diethyl phthalate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethyl phthalate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Di-n-octyl phthalate	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Phthalate	3.0	mg/kg	<3.0	<3.0	<3.0	<3.0	<3.0
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	10	mg/kg	<10	<10	<10	<10	<10
C15-C28 Fraction	20	mg/kg	<20	<20	<20	<20	<20
C29-C36 Fraction	20	mg/kg	<20	<20	<20	<20	<20
Metals							
Test/Reference	PQL	Unit					
3400 Mercury in Soil by FIMS							
Mercury	0.01	mg/kg	0.01	0.03	0.01	<0.01	<0.01
3100 Total Metals in Soil By ICP/MS							
Antimony	2	mg/kg	<2	<2	<2	<2	<2
Arsenic	2	mg/kg	6.8	5.0	6.3	<2	3.4
Barium	2	mg/kg	33	120	26	20	50
Beryllium	2	mg/kg	<2	<2	<2	<2	<2
Boron	2	mg/kg	13	12	11	9.3	8.1
Cadmium	2	mg/kg	<2	<2	<2	<2	<2
Chromium	2	mg/kg	38	40	29	22	29
Cobalt	2	mg/kg	18	12	17	21	20
Copper	2	mg/kg	19	19	19	12	15
Lead	2	mg/kg	14	12	16	8.3	10
Manganese	2	mg/kg	310	220	630	620	820
Molybdenum	2	mg/kg	<2	<2	<2	<2	<2
Nickel	2	mg/kg	44	28	32	37	38
Selenium	2	mg/kg	<2	<2	<2	<2	<2
Tin	2	mg/kg	<2	<2	<2	<2	<2
Vanadium	2	mg/kg	37	35	31	19	31
Zinc	2	mg/kg	32	34	39	14	23
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	13	11	14	17	14

Customer Sample ID			4A/B-8/9.0	4A/B-8/10.0	4A/B-8/12	4A/B-8/TB-1	4A/B-8/QS-1
Sample Matrix			SOIL	SOIL	SOIL	WATER	SOIL
Labmark Sample No.			1401603	1401604	1401606	1401611	1401612
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
VOC							
Test/Reference	PQL	Unit					
1100 TPH (C6-C9) in Soil by P&T							
4-Bromofluorobenzene - Surrogate	-	%	111	-	-	-	-
C6-C9 Fraction	5	mg/kg	<5.0	-	-	-	-

Customer Sample ID			4A/B-8/9.0	4A/B-8/10.0	4A/B-8/12	4A/B-8/TB-1	4A/B-8/QS-1
Sample Matrix			SOIL	SOIL	SOIL	WATER	SOIL
Labmark Sample No.			1401603	1401604	1401606	1401611	1401612
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
SVOC							
Test/Reference	PQL	Unit					
2920 Phenoxy Herbicides in Soil by HPLC							
2,4,5-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	<0.5	-	-	-	-
2,4,5-Trichlorophenoxy-propanoic acDB	0.5	mg/kg	<0.5	-	-	-	-
2,4,6-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	<0.5	-	-	-	-
2,4-Dichlorophenoxy propanoic acidDB	0.5	mg/kg	<0.5	-	-	-	-
2,4-Dichlorophenoxy-acetic acid (24DB	0.5	mg/kg	<0.5	-	-	-	-
2,4-Dichlorophenoxy-butanoic acid (DB	0.5	mg/kg	<0.5	-	-	-	-
2-Chlorophenoxy acetic acid (2-CPDB	0.5	mg/kg	<0.5	-	-	-	-
2-Methyl-4-chlorophenoxy-acetic acDB	0.5	mg/kg	<0.5	-	-	-	-
2-Methyl-4-chlorophenoxy butanoic aDB	0.5	mg/kg	<0.5	-	-	-	-
4-Chlorophenoxy acetic acidDB	0.5	mg/kg	<0.5	-	-	-	-
DicambaDB	0.5	mg/kg	<0.5	-	-	-	-
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	<0.5	-	-	-	-
a-Chlordane	0.5	mg/kg	<0.5	-	-	-	-
a-Endosulfan	0.5	mg/kg	<0.5	-	-	-	-
Aldrin	0.5	mg/kg	<0.5	-	-	-	-
b-BHC	0.5	mg/kg	<0.5	-	-	-	-
b-Endosulfan	0.5	mg/kg	<0.5	-	-	-	-
d-BHC	0.5	mg/kg	<0.5	-	-	-	-
DDD	0.5	mg/kg	<0.5	-	-	-	-
DDE	0.5	mg/kg	<0.5	-	-	-	-
DDT	0.5	mg/kg	<0.5	-	-	-	-
Dieldrin	0.5	mg/kg	<0.5	-	-	-	-
Endosulfan sulfate	0.5	mg/kg	<0.5	-	-	-	-
Endrin	0.5	mg/kg	<0.5	-	-	-	-
Endrin Aldehyde	0.5	mg/kg	<0.5	-	-	-	-
g-BHC	0.5	mg/kg	<0.5	-	-	-	-
g-Chlordane	0.5	mg/kg	<0.5	-	-	-	-
Heptachlor	0.5	mg/kg	<0.5	-	-	-	-
Heptachlor epoxide	0.5	mg/kg	<0.5	-	-	-	-
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	-	-	-	-
Methoxychlor	0.5	mg/kg	<0.5	-	-	-	-
Oxychlordane	0.5	mg/kg	<0.5	-	-	-	-
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	114	-	-	-	-
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	-	-	-	-
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	-	-	-	-
Diazinon	0.5	mg/kg	<0.5	-	-	-	-
Ethion	0.5	mg/kg	<0.5	-	-	-	-
Fenitrothion	0.5	mg/kg	<0.5	-	-	-	-
Fenthion	0.5	mg/kg	<0.5	-	-	-	-
Malathion	0.5	mg/kg	<0.5	-	-	-	-
Methyl Parathion	0.5	mg/kg	<0.5	-	-	-	-
Parathion	0.5	mg/kg	<0.5	-	-	-	-
Ronnel	0.5	mg/kg	<0.5	-	-	-	-

Customer Sample ID			4A/B-8/9.0	4A/B-8/10.0	4A/B-8/12	4A/B-8/TB-1	4A/B-8/QS-1
Sample Matrix			SOIL	SOIL	SOIL	WATER	SOIL
Labmark Sample No.			1401603	1401604	1401606	1401611	1401612
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
SVOC							
Test/Reference	PQL	Unit					
Triphenyl Phosphate - OPP SURROGATE	1	%	107	-	-	-	-
2100 PAH in Soil by GC							
Acenaphthene	0.5	mg/kg	<0.5	-	-	-	-
Acenaphthylene	0.5	mg/kg	<0.5	-	-	-	-
Anthracene	0.5	mg/kg	<0.5	-	-	-	-
Benz(a)anthracene	0.5	mg/kg	<0.5	-	-	-	-
Benzo(a)pyrene	0.5	mg/kg	<0.5	-	-	-	-
Benzo(b)&(k)fluoranthene	1	mg/kg	<1	-	-	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5	-	-	-	-
Chrysene	0.5	mg/kg	<0.5	-	-	-	-
Dibenz(ah)anthracene	0.5	mg/kg	<0.5	-	-	-	-
Fluoranthene	0.5	mg/kg	<0.5	-	-	-	-
Fluorene	0.5	mg/kg	<0.5	-	-	-	-
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5	-	-	-	-
Naphthalene	0.5	mg/kg	<0.5	-	-	-	-
Phenanthrene	0.5	mg/kg	<0.5	-	-	-	-
Pyrene	0.5	mg/kg	<0.5	-	-	-	-
Sum of PAHs	0.5	mg/kg	<0.5	-	-	-	-
2-Fluorobiphenyl - Surrogate	-	%	102	-	-	-	-
p-Terphenyl-D14 - Surrogate	-	%	112	-	-	-	-
Anthracene-d10 - Surrogate	-	%	110	-	-	-	-
2600 PCBs in Soil by GC							
Aroclor 1016DB	0.5	mg/kg	<0.5	-	-	-	-
Aroclor 1221DB	0.5	mg/kg	<0.5	-	-	-	-
Aroclor 1232 and 1242 as totalDB	1	mg/kg	<1	-	-	-	-
Aroclor 1248 and 1254 as totalDB	1	mg/kg	<1	-	-	-	-
Aroclor 1260DB	0.5	mg/kg	<0.5	-	-	-	-
Total Polychlorinated biphenylsDB	1	mg/kg	<1	-	-	-	-
Decachlorobiphenyl - PCB surrogate	1	%	113	-	-	-	-
2800 Individual Phenols in Soil by GC							
2,3,4,6-Tetrachlorophenol	1	mg/kg	<1	-	-	-	-
2,3,4-Trichlorophenol	0.5	mg/kg	<0.5	-	-	-	-
2,3,5,6-Tetrachlorophenol	1	mg/kg	<1	-	-	-	-
2,3,5-Trichlorophenol	0.5	mg/kg	<0.5	-	-	-	-
2,3,6-Trichlorophenol	0.5	mg/kg	<0.5	-	-	-	-
2,3-Dichlorophenol	1	mg/kg	<1	-	-	-	-
2,4 & 2,5-Dichlorophenol	2	mg/kg	<2	-	-	-	-
2,4,6-Trichlorophenol	0.5	mg/kg	<0.5	-	-	-	-
2,6-Dichlorophenol	0.5	mg/kg	<0.5	-	-	-	-
2-Chlorophenol	0.5	mg/kg	<0.5	-	-	-	-
2-Methylphenol	0.5	mg/kg	<0.5	-	-	-	-
3,4-Dichlorophenol	0.5	mg/kg	<0.5	-	-	-	-
3,5-Dichlorophenol	0.5	mg/kg	<0.5	-	-	-	-
3-Chlorophenol & 4-Chlorophenol	1	mg/kg	<1	-	-	-	-
3-Methylphenol & 4-Methylphenol	1	mg/kg	<1	-	-	-	-
4-Chloro-3-methylphenol	0.5	mg/kg	<0.5	-	-	-	-
Pentachlorophenol	1	mg/kg	<1	-	-	-	-
Phenol	0.5	mg/kg	<0.5	-	-	-	-
2,4,6-Tribromophenol-Surrogate	1	%	67	-	-	-	-

Customer Sample ID			4A/B-8/9.0	4A/B-8/10.0	4A/B-8/12	4A/B-8/TB-1	4A/B-8/QS-1
Sample Matrix			SOIL	SOIL	SOIL	WATER	SOIL
Labmark Sample No.			1401603	1401604	1401606	1401611	1401612
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
SVOC							
Test/Reference	PQL	Unit					
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	0.5	mg/kg	<0.5	-	-	-	-
Butyl benzyl phthalate	0.5	mg/kg	<0.5	-	-	-	-
Dibutyl phthalate	0.5	mg/kg	<0.5	-	-	-	-
Diethyl phthalate	0.5	mg/kg	<0.5	-	-	-	-
Dimethyl phthalate	0.5	mg/kg	<0.5	-	-	-	-
Di-n-octyl phthalate	0.5	mg/kg	<0.5	-	-	-	-
Total Phthalate	3.0	mg/kg	<3.0	-	-	-	-
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	10	mg/kg	<10	-	-	-	-
C15-C28 Fraction	20	mg/kg	<20	-	-	-	-
C29-C36 Fraction	20	mg/kg	<20	-	-	-	-
Metals							
Test/Reference	PQL	Unit					
3400 Mercury in Soil by FIMS							
Mercury	0.01	mg/kg	<0.01	<0.01	<0.01	-	<0.01
3100 Total Metals in Soil By ICP/MS							
Antimony	2	mg/kg	<2	<2	<2	-	<2
Arsenic	2	mg/kg	3.5	<2	<2	-	<2
Barium	2	mg/kg	280	100	18	-	22
Beryllium	2	mg/kg	<2	<2	<2	-	<2
Boron	2	mg/kg	8.7	9.1	6.2	-	6.1
Cadmium	2	mg/kg	<2	<2	<2	-	<2
Chromium	2	mg/kg	71	56	28	-	25
Cobalt	2	mg/kg	32	46	28	-	25
Copper	2	mg/kg	16	24	21	-	23
Lead	2	mg/kg	8.5	2.9	<2	-	<2
Manganese	2	mg/kg	640	900	550	-	490
Molybdenum	2	mg/kg	<2	<2	<2	-	<2
Nickel	2	mg/kg	57	150	130	-	110
Selenium	2	mg/kg	<2	<2	<2	-	<2
Tin	2	mg/kg	<2	<2	<2	-	<2
Vanadium	2	mg/kg	51	23	<2	-	<2
Zinc	2	mg/kg	29	57	51	-	49
3100 Dissolved Metals in Water By ICP/MS							
Antimony	5	µg/L	-	-	-	<5	-
Arsenic	5	µg/L	-	-	-	<5	-
Barium	5	µg/L	-	-	-	<5	-
Beryllium	5	µg/L	-	-	-	<5	-
Boron	5	µg/L	-	-	-	<5	-
Cadmium	5	µg/L	-	-	-	<5	-
Chromium	5	µg/L	-	-	-	<5	-
Cobalt	5	µg/L	-	-	-	<5	-
Copper	5	µg/L	-	-	-	<5	-
Lead	5	µg/L	-	-	-	<5	-
Manganese	5	µg/L	-	-	-	<5	-
Molybdenum	5	µg/L	-	-	-	<5	-
Nickel	5	µg/L	-	-	-	<5	-
Selenium	5	µg/L	-	-	-	<5	-
Tin	5	µg/L	-	-	-	<5	-

Customer Sample ID			4A/B-8/9.0	4A/B-8/10.0	4A/B-8/12	4A/B-8/TB-1	4A/B-8/QS-1
Sample Matrix			SOIL	SOIL	SOIL	WATER	SOIL
Labmark Sample No.			1401603	1401604	1401606	1401611	1401612
Date Sampled			09/02/2009	09/02/2009	09/02/2009	09/02/2009	09/02/2009
Metals							
Test/Reference	PQL	Unit					
Vanadium	5	µg/L	-	-	-	<5	-
Zinc	5	µg/L	-	-	-	<5	-
3400 Dissolved Mercury in Water by FIMS							
Mercury	0.1	µg/L	-	-	-	<0.1	-
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	12	7	5	-	16

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
0000 Total Fluoride	Melbourne 1645	N/A	18/02/2009
1100 TPH (C6-C9) in Soil by P&T	Melbourne 1645	13/02/2009	15/02/2009
1300 VOCs in Soil by P&T	Melbourne 1645	16/02/2009	19/02/2009
2000 TPH (C10 - C36) in Soil by GC	Melbourne 1645	12/02/2009	15/02/2009
2100 PAH in Soil by GC	Melbourne 1645	12/02/2009	16/02/2009
2200 OC Pesticides in Soil by GC-MS	Melbourne 1645	12/02/2009	16/02/2009
2400 OP Pesticides in Soil by GC	Melbourne 1645	12/02/2009	16/02/2009
2600 PCBs in Soil by GC	Melbourne 1645	12/02/2009	16/02/2009
2800 Individual Phenols in Soil by GC	Melbourne 1645	12/02/2009	21/02/2009
2880 Phthalates in Soil by GC	Melbourne 1645	12/02/2009	16/02/2009
2920 Phenoxy Herbicides in Soil by HPLC	Melbourne 1645	16/02/2009	22/02/2009
3100 Dissolved Metals in Water By ICP/MS	Melbourne 1645	12/02/2009	15/02/2009
3100 Total Metals in Soil By ICP/MS	Melbourne 1645	16/02/2009	17/02/2009
3400 Dissolved Mercury in Water by FIMS	Melbourne 1645	12/02/2009	13/02/2009
3400 Mercury in Soil by FIMS	Melbourne 1645	16/02/2009	24/02/2009
4230 Hexavalent Chromium in Soil	Melbourne 1645	13/02/2009	13/02/2009
4270 Total Cyanide in Soil Colourmetric	Melbourne 1645	12/02/2009	13/02/2009
5000 Moisture Content	Melbourne 1645	N/A	12/02/2009

Labmark Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
9. Samples were analysed on an as received basis.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403490 [Method Blank]							
3100 Dissolved Metals in Water By ICP/MS							
Antimony	µg/L	<5			< 5	Pass	
Arsenic	µg/L	<5			< 5	Pass	
Barium	µg/L	<5			< 5	Pass	
Beryllium	µg/L	<5			< 5	Pass	
Boron	µg/L	<5			< 5	Pass	
Cadmium	µg/L	<5			< 5	Pass	
Chromium	µg/L	<5			< 5	Pass	
Cobalt	µg/L	<5			< 5	Pass	
Copper	µg/L	<5			< 5	Pass	
Lead	µg/L	<5			< 5	Pass	
Manganese	µg/L	<5			< 5	Pass	
Molybdenum	µg/L	<5			< 5	Pass	
Nickel	µg/L	<5			< 5	Pass	
Selenium	µg/L	<5			< 5	Pass	
Tin	µg/L	<5			< 5	Pass	
Vanadium	µg/L	<5			< 5	Pass	
Zinc	µg/L	<5			< 5	Pass	
1403741 [Method Blank]							
3400 Dissolved Mercury in Water by FIMS							
Mercury	µg/L	<0.1			< 0.1	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1408001 [Method Blank]							
3100 Metals in Soil - As Received							
Antimony	mg/kg	<2			< 2	Pass	
Arsenic	mg/kg	<2			< 2	Pass	
Barium	mg/kg	<2			< 2	Pass	
Beryllium	mg/kg	<2			< 2	Pass	
Boron	mg/kg	<2			< 2	Pass	
Cadmium	mg/kg	<2			< 2	Pass	
Chromium	mg/kg	<2			< 2	Pass	
Cobalt	mg/kg	<2			< 2	Pass	
Copper	mg/kg	<2			< 2	Pass	
Lead	mg/kg	<2			< 2	Pass	
Manganese	mg/kg	<2			< 2	Pass	
Molybdenum	mg/kg	<2			< 2	Pass	
Nickel	mg/kg	<2			< 2	Pass	
Selenium	mg/kg	<2			< 2	Pass	
Tin	mg/kg	<2			< 2	Pass	
Vanadium	mg/kg	<2			< 2	Pass	
Zinc	mg/kg	<2			< 2	Pass	
1408137 [Method Blank]							
3400 Mercury in Soil by FIMS							
Mercury	mg/kg	<0.01			< 0.01	Pass	
1403491 [Laboratory Control Sample]							
3100 Dissolved Metals in Water By ICP/MS			Expected Value	Percent Recovery			
Antimony	µg/L	110	100.0	109	80-120 %	Pass	
Arsenic	µg/L	100	100.0	102	80-120 %	Pass	
Barium	µg/L	100	100.0	101	80-120 %	Pass	
Beryllium	µg/L	120	100.0	115	80-120 %	Pass	
Boron	µg/L	120	100.0	118	80-120 %	Pass	
Cadmium	µg/L	100	100.0	102	80-120 %	Pass	
Chromium	µg/L	100	100.0	103	80-120 %	Pass	
Cobalt	µg/L	100	100.0	103	80-120 %	Pass	
Copper	µg/L	100	100.0	100	80-120 %	Pass	
Lead	µg/L	100	100.0	100	80-120 %	Pass	
Manganese	µg/L	100	100.0	104	80-120 %	Pass	
Molybdenum	µg/L	100	100.0	103	80-120 %	Pass	
Nickel	µg/L	100	100.0	103	80-120 %	Pass	
Selenium	µg/L	100	100.0	100	80-120 %	Pass	
Tin	µg/L	110	100.0	113	80-120 %	Pass	
Vanadium	µg/L	100	100.0	104	80-120 %	Pass	
Zinc	µg/L	100	100.0	104	80-120 %	Pass	
1403742 [Laboratory Control Sample]							
3400 Dissolved Mercury in Water by FIMS			Expected Value	Percent Recovery			
Mercury	µg/L	10	10.0	103	80-120 %	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1408002 [Laboratory Control Sample]							
3100 Metals in Soil - As Received			Expected Value	Percent Recovery			
Antimony	mg/kg	84	100.0	84	70-130 %	Pass	
Arsenic	mg/kg	88	100.0	88	70-130 %	Pass	
Barium	mg/kg	88	100.0	88	70-130 %	Pass	
Beryllium	mg/kg	100	100.0	100	70-130 %	Pass	
Boron	mg/kg	100	100.0	100	70-130 %	Pass	
Cadmium	mg/kg	80	100.0	80	70-130 %	Pass	
Chromium	mg/kg	110	100.0	106	70-130 %	Pass	
Cobalt	mg/kg	100	100.0	104	70-130 %	Pass	
Copper	mg/kg	100	100.0	101	70-130 %	Pass	
Lead	mg/kg	99	100.0	99	70-130 %	Pass	
Manganese	mg/kg	91	100.0	91	70-130 %	Pass	
Molybdenum	mg/kg	89	100.0	89	70-130 %	Pass	
Nickel	mg/kg	99	100.0	99	70-130 %	Pass	
Selenium	mg/kg	89	100.0	89	70-130 %	Pass	
Tin	mg/kg	93	100.0	93	70-130 %	Pass	
Vanadium	mg/kg	100	100.0	105	70-130 %	Pass	
Zinc	mg/kg	93	100.0	93	70-130 %	Pass	
1408138 [Laboratory Control Sample]							
3400 Mercury in Soil by FIMS			Expected Value	Percent Recovery			
Mercury	mg/kg	8.1	10.0	81	80-120 %	Pass	
1402998 [Duplicate of 1401594]							
3400 Mercury in Soil by FIMS			Result 2	RPD			
Mercury	mg/kg	0.02	0.02	<1	0-30 %	Pass	
1403001 [Duplicate of 1401595]							
3400 Mercury in Soil by FIMS			Result 2	RPD			
Mercury	mg/kg	0.01	0.01	26	0-30 %	Pass	
1403006 [Duplicate of 1401594]							
3100 Total Metals in Soil By ICP/MS			Result 2	RPD			
Antimony	mg/kg	<2	<2	<1	0-30 %	Pass	
Arsenic	mg/kg	5.2	5.4	3	0-30 %	Pass	
Barium	mg/kg	83	86	3	0-30 %	Pass	
Beryllium	mg/kg	<2	<2	<1	0-30 %	Pass	
Boron	mg/kg	9.0	8.0	11	0-30 %	Pass	
Cadmium	mg/kg	<2	<2	<1	0-30 %	Pass	
Chromium	mg/kg	38	37	5	0-30 %	Pass	
Cobalt	mg/kg	14	14	3	0-30 %	Pass	
Copper	mg/kg	19	18	5	0-30 %	Pass	
Lead	mg/kg	11	11	2	0-30 %	Pass	
Manganese	mg/kg	320	310	1	0-30 %	Pass	
Molybdenum	mg/kg	<2	<2	<1	0-30 %	Pass	
Nickel	mg/kg	32	33	3	0-30 %	Pass	
Selenium	mg/kg	<2	<2	<1	0-30 %	Pass	
Tin	mg/kg	<2	<2	<1	0-30 %	Pass	
Vanadium	mg/kg	32	32	2	0-30 %	Pass	
Zinc	mg/kg	42	43	3	0-30 %	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403010 [Duplicate of 1401595]							
3100 Total Metals in Soil By ICP/MS			Result 2	RPD			
Antimony	mg/kg	<2	<2	<1	0-30 %	Pass	
Arsenic	mg/kg	6.0	5.8	3	0-30 %	Pass	
Barium	mg/kg	45	41	9	0-30 %	Pass	
Beryllium	mg/kg	<2	<2	<1	0-30 %	Pass	
Boron	mg/kg	9.9	9.5	4	0-30 %	Pass	
Cadmium	mg/kg	<2	<2	<1	0-30 %	Pass	
Chromium	mg/kg	38	37	1	0-30 %	Pass	
Cobalt	mg/kg	14	14	3	0-30 %	Pass	
Copper	mg/kg	20	19	6	0-30 %	Pass	
Lead	mg/kg	13	11	12	0-30 %	Pass	
Manganese	mg/kg	350	320	9	0-30 %	Pass	
Molybdenum	mg/kg	<2	<2	<1	0-30 %	Pass	
Nickel	mg/kg	33	32	1	0-30 %	Pass	
Selenium	mg/kg	<2	<2	<1	0-30 %	Pass	
Tin	mg/kg	<2	<2	<1	0-30 %	Pass	
Vanadium	mg/kg	31	29	7	0-30 %	Pass	
Zinc	mg/kg	46	45	3	0-30 %	Pass	
1403026 [Spike of 1401596]							
3100 Total Metals in Soil By ICP/MS			Spike Value	Percent Recovery			
Arsenic	mg/kg	77	100.0	73	70-130 %	Pass	
Barium	mg/kg	140	100.0	74	70-130 %	Pass	
Beryllium	mg/kg	100	100.0	104	70-130 %	Pass	
Boron	mg/kg	110	100.0	101	70-130 %	Pass	
Cadmium	mg/kg	76	100.0	76	70-130 %	Pass	
Chromium	mg/kg	140	100.0	113	70-130 %	Pass	
Cobalt	mg/kg	120	100.0	108	70-130 %	Pass	
Copper	mg/kg	120	100.0	103	70-130 %	Pass	
Lead	mg/kg	99	100.0	88	70-130 %	Pass	
Molybdenum	mg/kg	77	100.0	77	70-130 %	Pass	
Nickel	mg/kg	120	100.0	97	70-130 %	Pass	
Selenium	mg/kg	79	100.0	78	70-130 %	Pass	
Vanadium	mg/kg	130	100.0	106	70-130 %	Pass	
Zinc	mg/kg	130	100.0	96	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403970 [Method Blank]							
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	mg/kg	<10			< 10	Pass	
C15-C28 Fraction	mg/kg	<20			< 20	Pass	
C29-C36 Fraction	mg/kg	<20			< 20	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403972 [Method Blank]							
2100 PAH in Soil by GC							
Acenaphthene	mg/kg	<0.5			< 0.5	Pass	
Acenaphthylene	mg/kg	<0.5			< 0.5	Pass	
Anthracene	mg/kg	<0.5			< 0.5	Pass	
Benz(a)anthracene	mg/kg	<0.5			< 0.5	Pass	
Benzo(a)pyrene	mg/kg	<0.5			< 0.5	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	<1			< 1	Pass	
Benzo(g.h.i)perylene	mg/kg	<0.5			< 0.5	Pass	
Chrysene	mg/kg	<0.5			< 0.5	Pass	
Dibenz(ah)anthracene	mg/kg	<0.5			< 0.5	Pass	
Fluoranthene	mg/kg	<0.5			< 0.5	Pass	
Fluorene	mg/kg	<0.5			< 0.5	Pass	
Indeno(123-cd)pyrene	mg/kg	<0.5			< 0.5	Pass	
Naphthalene	mg/kg	<0.5			< 0.5	Pass	
Phenanthrene	mg/kg	<0.5			< 0.5	Pass	
Pyrene	mg/kg	<0.5			< 0.5	Pass	
Sum of PAHs	mg/kg	<0.5			< 0.5	Pass	
2-Fluorobiphenyl - Surrogate	%	104			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	110			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	110			70-130 %	Pass	
2200 OC Pesticides in Soil by GC-MS							
a-BHC	mg/kg	<0.5			< 0.5	Pass	
a-Chlordane	mg/kg	<0.5			< 0.5	Pass	
a-Endosulfan	mg/kg	<0.5			< 0.5	Pass	
Aldrin	mg/kg	<0.5			< 0.5	Pass	
b-BHC	mg/kg	<0.5			< 0.5	Pass	
b-Endosulfan	mg/kg	<0.5			< 0.5	Pass	
d-BHC	mg/kg	<0.5			< 0.5	Pass	
DDD	mg/kg	<0.5			< 0.5	Pass	
DDE	mg/kg	<0.5			< 0.5	Pass	
DDT	mg/kg	<0.5			< 0.5	Pass	
Dieldrin	mg/kg	<0.5			< 0.5	Pass	
Endosulfan sulfate	mg/kg	<0.5			< 0.5	Pass	
Endrin	mg/kg	<0.5			< 0.5	Pass	
Endrin Aldehyde	mg/kg	<0.5			< 0.5	Pass	
g-BHC	mg/kg	<0.5			< 0.5	Pass	
g-Chlordane	mg/kg	<0.5			< 0.5	Pass	
Heptachlor	mg/kg	<0.5			< 0.5	Pass	
Heptachlor epoxide	mg/kg	<0.5			< 0.5	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5			< 0.5	Pass	
Methoxychlor	mg/kg	<0.5			< 0.5	Pass	
Oxychlordane	mg/kg	<0.5			< 0.5	Pass	
2.4.5.6-tetrachloro-m-xylene-SURROGATE	%	110			70-130 %	Pass	
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	mg/kg	<0.5			< 0.5	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5			< 0.5	Pass	
Diazinon	mg/kg	<0.5			< 0.5	Pass	
Ethion	mg/kg	<0.5			< 0.5	Pass	
Fenitrothion	mg/kg	<0.5			< 0.5	Pass	
Fenthion	mg/kg	<0.5			< 0.5	Pass	
Malathion	mg/kg	<0.5			< 0.5	Pass	
Methyl Parathion	mg/kg	<0.5			< 0.5	Pass	
Parathion	mg/kg	<0.5			< 0.5	Pass	
Ronnel	mg/kg	<0.5			< 0.5	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	98			70-130 %	Pass	
2600 PCBs in Soil by GC							
Aroclor 1016	mg/kg	<0.5			< 0.5	Pass	
Aroclor 1221	mg/kg	<0.5			< 0.5	Pass	
Aroclor 1232 and 1242 as total	mg/kg	<1			< 1	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403972 [Method Blank]							
2600 PCBs in Soil by GC							
Aroclor 1248 and 1254 as total	mg/kg	<1			< 1	Pass	
Aroclor 1260	mg/kg	<0.5			< 0.5	Pass	
Total Polychlorinated biphenyls	mg/kg	<1			< 1	Pass	
Decachlorobiphenyl - PCB surrogate	%	113			70-130 %	Pass	
2800 Individual Phenols in Soil by GC							
2,3,4,6-Tetrachlorophenol	mg/kg	<1			< 1	Pass	
2,3,4-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	<1			< 1	Pass	
2,3,5-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3,6-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3-Dichlorophenol	mg/kg	<1			< 1	Pass	
2,4&2,5-Dichlorophenol	mg/kg	<2			< 2	Pass	
2,4,6-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,6-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2-Chlorophenol	mg/kg	<0.5			< 0.5	Pass	
2-Methylphenol	mg/kg	<0.5			< 0.5	Pass	
3,4-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
3,5-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	<1			< 1	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	<1			< 1	Pass	
4-Chloro-3-methylphenol	mg/kg	<0.5			< 0.5	Pass	
Pentachlorophenol	mg/kg	<1			< 1	Pass	
Phenol	mg/kg	<0.5			< 0.5	Pass	
2,4,6-Tribromophenol-Surrogate	%	65			50-130 %	Pass	
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	mg/kg	<0.5			< 0.5	Pass	
Butyl benzyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Dibutyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Diethyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Dimethyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Di-n-octyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Total Phthalate	mg/kg	<3.0			< 3.0	Pass	
1403976 [Method Blank]							
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	mg/kg	<10			< 10	Pass	
C15-C28 Fraction	mg/kg	<20			< 20	Pass	
C29-C36 Fraction	mg/kg	<20			< 20	Pass	
1403978 [Method Blank]							
2100 PAH in Soil by GC							
Acenaphthene	mg/kg	<0.5			< 0.5	Pass	
Acenaphthylene	mg/kg	<0.5			< 0.5	Pass	
Anthracene	mg/kg	<0.5			< 0.5	Pass	
Benz(a)anthracene	mg/kg	<0.5			< 0.5	Pass	
Benzo(a)pyrene	mg/kg	<0.5			< 0.5	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	<1			< 1	Pass	
Benzo(g.h.i)perylene	mg/kg	<0.5			< 0.5	Pass	
Chrysene	mg/kg	<0.5			< 0.5	Pass	
Dibenz(ah)anthracene	mg/kg	<0.5			< 0.5	Pass	
Fluoranthene	mg/kg	<0.5			< 0.5	Pass	
Fluorene	mg/kg	<0.5			< 0.5	Pass	
Indeno(123-cd)pyrene	mg/kg	<0.5			< 0.5	Pass	
Naphthalene	mg/kg	<0.5			< 0.5	Pass	
Phenanthrene	mg/kg	<0.5			< 0.5	Pass	
Pyrene	mg/kg	<0.5			< 0.5	Pass	
Sum of PAHs	mg/kg	<0.5			< 0.5	Pass	
2-Fluorobiphenyl - Surrogate	%	104			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	107			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	108			70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1405988 [Method Blank]							
2920 Phenoxy Herbicides in Soil by HPLC							
2,4,5-Trichlorophenoxy-acetic acid	mg/kg	<0.5			< 0.5	Pass	
2,4,5-Trichlorophenoxy-propanoic ac	mg/kg	<0.5			< 0.5	Pass	
2,4,6-Trichlorophenoxy-acetic acid	mg/kg	<0.5			< 0.5	Pass	
2,4-Dichlorophenoxy propanoic acid	mg/kg	<0.5			< 0.5	Pass	
2,4-Dichlorophenoxy-acetic acid (24	mg/kg	<0.5			< 0.5	Pass	
2,4-Dichlorophenoxy-butanoic acid (	mg/kg	<0.5			< 0.5	Pass	
2-Chlorophenoxy acetic acid (2-CP	mg/kg	<0.5			< 0.5	Pass	
2-Methyl-4-chlorophenoxy butanoic a	mg/kg	<0.5			< 0.5	Pass	
2-Methyl-4-chlorophenoxy-acetic ac	mg/kg	<0.5			< 0.5	Pass	
4-Chlorophenoxy acetic acid	mg/kg	<0.5			< 0.5	Pass	
Dicamba	mg/kg	<0.5			< 0.5	Pass	
1403971 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	130	125.0	101	70-130 %	Pass	
C15-C28 Fraction	mg/kg	130	125.0	103	70-130 %	Pass	
C29-C36 Fraction	mg/kg	110	125.0	88	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403973 [Laboratory Control Sample]							Q13
2100 PAH in Soil by GC			Expected Value	Percent Recovery			
Acenaphthene	mg/kg	2.2	2.0	110	70-130 %	Pass	
Acenaphthylene	mg/kg	2.0	2.0	102	70-130 %	Pass	
Anthracene	mg/kg	2.3	2.0	116	70-130 %	Pass	
Benz(a)anthracene	mg/kg	2.1	2.0	106	70-130 %	Pass	
Benzo(a)pyrene	mg/kg	2.1	2.0	106	70-130 %	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	4.3	4.0	107	70-130 %	Pass	
Benzo(g.h.i)perylene	mg/kg	2.0	2.0	100	70-130 %	Pass	
Chrysene	mg/kg	2.1	2.0	106	70-130 %	Pass	
Dibenz(ah)anthracene	mg/kg	1.9	2.0	96	70-130 %	Pass	
Fluoranthene	mg/kg	2.2	2.0	110	70-130 %	Pass	
Fluorene	mg/kg	2.2	2.0	108	70-130 %	Pass	
Indeno(123-cd)pyrene	mg/kg	1.9	2.0	95	70-130 %	Pass	
Naphthalene	mg/kg	2.1	2.0	106	70-130 %	Pass	
Phenanthrene	mg/kg	2.2	2.0	110	70-130 %	Pass	
Pyrene	mg/kg	2.2	2.0	108	70-130 %	Pass	
Sum of PAHs	mg/kg	34	32.0	106	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	96			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	103			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	104			70-130 %	Pass	
2200 OC Pesticides in Soil by GC-MS			Expected Value	Percent Recovery			
a-BHC	mg/kg	1.9	2.0	96	70-130 %	Pass	
a-Chlordane	mg/kg	2.2	2.0	108	70-130 %	Pass	
a-Endosulfan	mg/kg	2.2	2.0	108	70-130 %	Pass	
Aldrin	mg/kg	1.8	2.0	89	70-130 %	Pass	
b-BHC	mg/kg	2.0	2.0	100	70-130 %	Pass	
b-Endosulfan	mg/kg	2.0	2.0	99	70-130 %	Pass	
d-BHC	mg/kg	2.0	2.0	102	70-130 %	Pass	
DDD	mg/kg	2.0	2.0	102	70-130 %	Pass	
DDE	mg/kg	2.2	2.0	108	70-130 %	Pass	
DDT	mg/kg	2.0	2.0	102	70-130 %	Pass	
Dieldrin	mg/kg	2.0	2.0	100	70-130 %	Pass	
Endosulfan sulfate	mg/kg	1.8	2.0	89	70-130 %	Pass	
Endrin	mg/kg	2.0	2.0	98	70-130 %	Pass	
Endrin Aldehyde	mg/kg	2.1	2.0	104	70-130 %	Pass	
g-BHC	mg/kg	2.0	2.0	102	70-130 %	Pass	
g-Chlordane	mg/kg	2.1	2.0	105	70-130 %	Pass	
Heptachlor	mg/kg	2.1	2.0	105	70-130 %	Pass	
Heptachlor epoxide	mg/kg	1.9	2.0	96	70-130 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	1.9	2.0	95	70-130 %	Pass	
Methoxychlor	mg/kg	2.2	2.0	108	70-130 %	Pass	
Oxychlordane	mg/kg	<0.5	N/A	N/A	N/A	N/A	
2400 OP Pesticides in Soil by GC			Expected Value	Percent Recovery			
Chlorpyrifos	mg/kg	2.2	2.0	109	70-130 %	Pass	
Chlorpyrifos Methyl	mg/kg	2.1	2.0	104	70-130 %	Pass	
Diazinon	mg/kg	2.4	2.0	121	70-130 %	Pass	
Ethion	mg/kg	2.0	2.0	100	70-130 %	Pass	
Fenitrothion	mg/kg	2.0	2.0	99	70-130 %	Pass	
Fenthion	mg/kg	2.3	2.0	115	70-130 %	Pass	
Malathion	mg/kg	1.3	N/A	N/A	N/A	N/A	
Methyl Parathion	mg/kg	1.7	2.0	86	70-130 %	Pass	
Parathion	mg/kg	2.0	2.0	102	70-130 %	Pass	
Ronnel	mg/kg	2.2	2.0	108	70-130 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	98			70-130 %	Pass	
2600 PCBs in Soil by GC			Expected Value	Percent Recovery			
Aroclor 1016	mg/kg	2.1	2.0	104	70-130 %	Pass	
Aroclor 1221	mg/kg	<0.5	N/A	N/A	N/A	N/A	
Aroclor 1232 and 1242 as total	mg/kg	<1	N/A	N/A	N/A	N/A	
Aroclor 1248 and 1254 as total	mg/kg	2.3	2.0	115	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403973 [Laboratory Control Sample]							Q13
2600 PCBs in Soil by GC			Expected Value	Percent Recovery			
Aroclor 1260	mg/kg	2.2	2.0	108	70-130 %	Pass	
Total Polychlorinated biphenyls	mg/kg	6.6	N/A	N/A	N/A	N/A	
Decachlorobiphenyl - PCB surrogate	%	104			70-130 %	Pass	
1403974 [Laboratory Control Sample]							Q13
2800 Individual Phenols in Soil by GC			Expected Value	Percent Recovery			
2,3,4,6-Tetrachlorophenol	mg/kg	3.6	4.0	91	50-130 %	Pass	
2,3,4-Trichlorophenol	mg/kg	3.6	4.0	90	50-130 %	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	2.8	4.0	71	50-130 %	Pass	
2,3,5-Trichlorophenol	mg/kg	3.6	4.0	91	50-130 %	Pass	
2,3,6-Trichlorophenol	mg/kg	4.0	4.0	99	50-130 %	Pass	
2,3-Dichlorophenol	mg/kg	5.5	N/A	N/A	N/A	N/A	
2,4&2,5-Dichlorophenol	mg/kg	6.6	8.0	83	50-130 %	Pass	
2,4,6-Trichlorophenol	mg/kg	3.4	4.0	86	50-130 %	Pass	
2,6-Dichlorophenol	mg/kg	4.1	4.0	102	50-130 %	Pass	
2-Chlorophenol	mg/kg	4.0	4.0	99	50-130 %	Pass	
2-Methylphenol	mg/kg	3.8	4.0	95	50-130 %	Pass	
3,4-Dichlorophenol	mg/kg	4.1	4.0	102	50-130 %	Pass	
3,5-Dichlorophenol	mg/kg	4.4	4.0	111	50-130 %	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	8.7	8.0	109	50-130 %	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	7.8	8.0	98	50-130 %	Pass	
4-Chloro-3-methylphenol	mg/kg	4.0	4.0	101	50-130 %	Pass	
Pentachlorophenol	mg/kg	4.6	8.0	57	50-130 %	Pass	
Phenol	mg/kg	4.1	4.0	102	50-130 %	Pass	
2,4,6-Tribromophenol-Surrogate	%	86			50-130 %	Pass	
1403975 [Laboratory Control Sample]							
2880 Phthalates in Soil by GC			Expected Value	Percent Recovery			
bis (2-ethylhexyl) phthalate	mg/kg	1.9	2.0	96	70-130 %	Pass	
Butyl benzyl phthalate	mg/kg	2.0	2.0	100	70-130 %	Pass	
Dibutyl phthalate	mg/kg	1.9	2.0	95	70-130 %	Pass	
Diethyl phthalate	mg/kg	1.8	2.0	92	70-130 %	Pass	
Dimethyl phthalate	mg/kg	2.0	2.0	98	70-130 %	Pass	
Di-n-octyl phthalate	mg/kg	2.0	2.0	98	70-130 %	Pass	
Total Phthalate	mg/kg	12	12.0	96	70-130 %	Pass	
1403977 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	140	125.0	113	70-130 %	Pass	
C15-C28 Fraction	mg/kg	140	125.0	115	70-130 %	Pass	
C29-C36 Fraction	mg/kg	120	125.0	96	70-130 %	Pass	
1405990 [Laboratory Control Sample]							Q13
2920 Phenoxy Herbicides in Soil by HPLC			Expected Value	Percent Recovery			
2,4,5-Trichlorophenoxy-acetic acid	mg/kg	1.1	1.0	110	70-130 %	Pass	
2,4,5-Trichlorophenoxy-propanoic ac	mg/kg	1.3	1.0	126	70-130 %	Pass	
2,4,6-Trichlorophenoxy-acetic acid	mg/kg	1.4	N/A	N/A	N/A	N/A	
2,4-Dichlorophenoxy propanoic acid	mg/kg	1.1	1.0	114	70-130 %	Pass	
2,4-Dichlorophenoxy-acetic acid (24	mg/kg	1.2	1.0	118	70-130 %	Pass	
2,4-Dichlorophenoxy-butanoic acid (	mg/kg	1.2	1.0	118	70-130 %	Pass	
2-Chlorophenoxy acetic acid (2-CP	mg/kg	1.1	1.0	110	70-130 %	Pass	
2-Methyl-4-chlorophenoxy butanoic a	mg/kg	1.1	1.0	106	70-130 %	Pass	
2-Methyl-4-chlorophenoxy-acetic ac	mg/kg	1.1	1.0	114	70-130 %	Pass	
4-Chlorophenoxy acetic acid	mg/kg	1.1	1.0	110	70-130 %	Pass	
Dicamba	mg/kg	1.1	1.0	108	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1402991 [Duplicate of 1401594]							
2920 Phenoxy Herbicides in Soil by HPLC			Result 2	RPD			
2,4,5-Trichlorophenoxy-acetic acidDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
2,4,5-Trichlorophenoxy-propanoic acDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
2,4,6-Trichlorophenoxy-acetic acidDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
2,4-Dichlorophenoxy propanoic acidDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
2,4-Dichlorophenoxy-acetic acid (24DB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
2,4-Dichlorophenoxy-butanoic acid (DB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
2-Chlorophenoxy acetic acid (2-CPDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
2-Methyl-4-chlorophenoxy butanoic aDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
2-Methyl-4-chlorophenoxy-acetic acDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
4-Chlorophenoxy acetic acidDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
DicambaDB	mg/kg	<0.5	<0.5	<1	0-20 %	Pass	
1403011 [Duplicate of 1401594]							
2200 OC Pesticides in Soil by GC-MS			Result 2	RPD			
a-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
d-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDD	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDE	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDT	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dieldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endosulfan sulfate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin Aldehyde	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor epoxide	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methoxychlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Oxychlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2.4.5.6-tetrachloro-m-xylene-SURROGATE	%	112			70-130 %	Pass	

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Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403012 [Duplicate of 1401595]							
2200 OC Pesticides in Soil by GC-MS			Result 2	RPD			
a-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
a-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
b-Endosulfan	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
d-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDD	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDE	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
DDT	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dieldrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endosulfan sulfate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Endrin Aldehyde	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-BHC	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
g-Chlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Heptachlor epoxide	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methoxychlor	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Oxychlordane	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2.4.5.6-tetrachloro-m-xylene-SURROGATE	%	116			70-130 %	Pass	
1403013 [Duplicate of 1401594]							
2400 OP Pesticides in Soil by GC			Result 2	RPD			
Chlorpyrifos	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Diazinon	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Ethion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fenitrothion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fenthion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Malathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Methyl Parathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Parathion	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Ronnel	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	106			70-130 %	Pass	
1403014 [Duplicate of 1401594]							
2100 PAH in Soil by GC			Result 2	RPD			
Acenaphthene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Acenaphthylene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Anthracene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Benz(a)anthracene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Benzo(a)pyrene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	<1	<1	<1	0-30 %	Pass	
Benzo(g.h.i)perylene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Chrysene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dibenz(ah)anthracene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fluoranthene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fluorene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Indeno(123-cd)pyrene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Naphthalene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Phenanthrene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Pyrene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Sum of PAHs	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2-Fluorobiphenyl - Surrogate	%	102			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	108			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	108			70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403015 [Duplicate of 1401595]							
2100 PAH in Soil by GC			Result 2	RPD			
Acenaphthene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Acenaphthylene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Anthracene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Benz(a)anthracene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Benzo(a)pyrene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	<1	<1	<1	0-30 %	Pass	
Benzo(g.h.i)perylene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Chrysene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dibenz(ah)anthracene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fluoranthene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Fluorene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Indeno(123-cd)pyrene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Naphthalene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Phenanthrene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Pyrene	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Sum of PAHs	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2-Fluorobiphenyl - Surrogate	%	102			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	110			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	110			70-130 %	Pass	
1403016 [Duplicate of 1401594]							
2600 PCBs in Soil by GC			Result 2	RPD			
Aroclor 1016DB	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aroclor 1221DB	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aroclor 1232 and 1242 as totalDB	mg/kg	<1	<1	<1	0-30 %	Pass	
Aroclor 1248 and 1254 as totalDB	mg/kg	<1	<1	<1	0-30 %	Pass	
Aroclor 1260DB	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Total Polychlorinated biphenylsDB	mg/kg	<1	<1	N/A	N/A	N/A	
Decachlorobiphenyl - PCB surrogate	%	111			70-130 %	Pass	
1403017 [Duplicate of 1401595]							
2600 PCBs in Soil by GC			Result 2	RPD			
Aroclor 1016DB	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aroclor 1221DB	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Aroclor 1232 and 1242 as totalDB	mg/kg	<1	<1	<1	0-30 %	Pass	
Aroclor 1248 and 1254 as totalDB	mg/kg	<1	<1	<1	0-30 %	Pass	
Aroclor 1260DB	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Total Polychlorinated biphenylsDB	mg/kg	<1	<1	N/A	N/A	N/A	
Decachlorobiphenyl - PCB surrogate	%	114			70-130 %	Pass	
1403018 [Duplicate of 1401594]							
2800 Individual Phenols in Soil by GC			Result 2	RPD			
2,3,4,6-Tetrachlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
2,3,4-Trichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
2,3,5-Trichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,3,6-Trichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,3-Dichlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
2,4 & 2,5-Dichlorophenol	mg/kg	<2	<2	<1	0-30 %	Pass	
2,4,6-Trichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,6-Dichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2-Chlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2-Methylphenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
3,4-Dichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
3,5-Dichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	<1	<1	<1	0-30 %	Pass	
4-Chloro-3-methylphenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Pentachlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
Phenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,4,6-Tribromophenol-Surrogate	%	68			50-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403019 [Duplicate of 1401595]							
2800 Individual Phenols in Soil by GC			Result 2	RPD			
2,3,4,6-Tetrachlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
2,3,4-Trichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
2,3,5-Trichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,3,6-Trichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,3-Dichlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
2,4 & 2,5-Dichlorophenol	mg/kg	<2	<2	<1	0-30 %	Pass	
2,4,6-Trichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,6-Dichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2-Chlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2-Methylphenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
3,4-Dichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
3,5-Dichlorophenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	<1	<1	<1	0-30 %	Pass	
4-Chloro-3-methylphenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Pentachlorophenol	mg/kg	<1	<1	<1	0-30 %	Pass	
Phenol	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
2,4,6-Tribromophenol-Surrogate	%	64			50-130 %	Pass	
1403020 [Duplicate of 1401594]							
2880 Phthalates in Soil by GC			Result 2	RPD			
bis (2-ethylhexyl) phthalate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Butyl benzyl phthalate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dibutyl phthalate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Diethyl phthalate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Dimethyl phthalate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Di-n-octyl phthalate	mg/kg	<0.5	<0.5	<1	0-30 %	Pass	
Total Phthalate	mg/kg	<3.0	<3.0	<1	0-30 %	Pass	
1403021 [Duplicate of 1401594]							
2000 TPH (C10 - C36) in Soil by GC			Result 2	RPD			
C10-C14 Fraction	mg/kg	<10	<10	<1	0-30 %	Pass	
C15-C28 Fraction	mg/kg	<20	<20	<1	0-30 %	Pass	
C29-C36 Fraction	mg/kg	<20	<20	<1	0-30 %	Pass	
1403022 [Duplicate of 1401595]							
2000 TPH (C10 - C36) in Soil by GC			Result 2	RPD			
C10-C14 Fraction	mg/kg	<10	<10	<1	0-30 %	Pass	
C15-C28 Fraction	mg/kg	<20	<20	<1	0-30 %	Pass	
C29-C36 Fraction	mg/kg	<20	<20	<1	0-30 %	Pass	
1403024 [Spike of 1401595]							
2920 Phenoxy Herbicides in Soil by HPLC			Spike Value	Percent Recovery			
2,4,5-Trichlorophenoxy-acetic acid	mg/kg	1.0	1.0	98	70-130 %	Pass	
2,4,5-Trichlorophenoxy-propanoic ac	mg/kg	1.0	1.0	96	70-130 %	Pass	
2,4,6-Trichlorophenoxy-acetic acid	mg/kg	1.2	1.0	120	70-130 %	Pass	
2,4-Dichlorophenoxy propanoic acid	mg/kg	1.0	1.0	104	70-130 %	Pass	
2,4-Dichlorophenoxy-acetic acid (24	mg/kg	1.0	1.0	100	70-130 %	Pass	
2,4-Dichlorophenoxy-butanoic acid (	mg/kg	1.1	1.0	106	70-130 %	Pass	
2-Chlorophenoxy acetic acid (2-CP	mg/kg	1.0	1.0	96	70-130 %	Pass	
2-Methyl-4-chlorophenoxy butanoic a	mg/kg	0.9	1.0	90	70-130 %	Pass	
2-Methyl-4-chlorophenoxy-acetic ac	mg/kg	1.0	1.0	100	70-130 %	Pass	
4-Chlorophenoxy acetic acid	mg/kg	1.0	1.0	96	70-130 %	Pass	
Dicamba	mg/kg	1.0	N/A	N/A	N/A	N/A	
Extraction Factor	-	2	N/A	N/A	N/A	N/A	
Volume of sample used for extraction	mL	20	N/A	N/A	N/A	N/A	
weight of sample	g	10	N/A	N/A	N/A	N/A	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403027 [Spike of 1401596]							
2200 OC Pesticides in Soil by GC-MS			Spike Value	Percent Recovery			
a-BHC	mg/kg	1.9	2.0	94	70-130 %	Pass	
a-Chlordane	mg/kg	2.2	2.0	110	70-130 %	Pass	
a-Endosulfan	mg/kg	2.1	2.0	105	70-130 %	Pass	
Aldrin	mg/kg	1.8	2.0	89	70-130 %	Pass	
b-BHC	mg/kg	2.0	2.0	100	70-130 %	Pass	
b-Endosulfan	mg/kg	2.1	2.0	106	70-130 %	Pass	
d-BHC	mg/kg	1.9	2.0	96	70-130 %	Pass	
DDD	mg/kg	2.1	2.0	106	70-130 %	Pass	
DDE	mg/kg	2.1	2.0	106	70-130 %	Pass	
DDT	mg/kg	2.1	2.0	105	70-130 %	Pass	
Dieldrin	mg/kg	2.1	2.0	106	70-130 %	Pass	
Endosulfan sulfate	mg/kg	2.0	2.0	98	70-130 %	Pass	
Endrin	mg/kg	2.0	2.0	102	70-130 %	Pass	
Endrin Aldehyde	mg/kg	1.9	2.0	95	70-130 %	Pass	
g-BHC	mg/kg	2.0	2.0	99	70-130 %	Pass	
g-Chlordane	mg/kg	2.0	2.0	102	70-130 %	Pass	
Heptachlor	mg/kg	1.9	2.0	95	70-130 %	Pass	
Heptachlor epoxide	mg/kg	2.0	2.0	99	70-130 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	1.8	2.0	92	70-130 %	Pass	
Methoxychlor	mg/kg	2.2	2.0	109	70-130 %	Pass	
Oxychlordane	mg/kg	<0.5	N/A	N/A	N/A	N/A	
2.4.5.6-tetrachloro-m-xylene-SURROGATE	%	106			70-130 %	Pass	
1403028 [Spike of 1401595]							Q13
2400 OP Pesticides in Soil by GC			Spike Value	Percent Recovery			
Chlorpyrifos	mg/kg	2.2	2.0	112	70-130 %	Pass	
Chlorpyrifos Methyl	mg/kg	2.1	2.0	104	70-130 %	Pass	
Diazinon	mg/kg	2.7	N/A	N/A	N/A	N/A	
Ethion	mg/kg	2.2	2.0	109	70-130 %	Pass	
Fenitrothion	mg/kg	1.7	2.0	85	70-130 %	Pass	
Fenthion	mg/kg	2.3	2.0	116	70-130 %	Pass	
Malathion	mg/kg	1.8	2.0	91	70-130 %	Pass	
Methyl Parathion	mg/kg	1.5	2.0	74	70-130 %	Pass	
Parathion	mg/kg	1.9	2.0	96	70-130 %	Pass	
Ronnel	mg/kg	2.2	2.0	110	70-130 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	108			70-130 %	Pass	
1403029 [Spike of 1401596]							
2100 PAH in Soil by GC			Spike Value	Percent Recovery			
Acenaphthene	mg/kg	2.1	2.0	106	70-130 %	Pass	
Acenaphthylene	mg/kg	2.0	2.0	99	70-130 %	Pass	
Anthracene	mg/kg	2.2	2.0	112	70-130 %	Pass	
Benz(a)anthracene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Benzo(a)pyrene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	4.2	4.0	104	70-130 %	Pass	
Benzo(g.h.i)perylene	mg/kg	2.0	2.0	98	70-130 %	Pass	
Chrysene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Dibenz(ah)anthracene	mg/kg	1.9	2.0	95	70-130 %	Pass	
Fluoranthene	mg/kg	2.2	2.0	111	70-130 %	Pass	
Fluorene	mg/kg	2.0	2.0	100	70-130 %	Pass	
Indeno(123-cd)pyrene	mg/kg	1.9	2.0	95	70-130 %	Pass	
Naphthalene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Phenanthrene	mg/kg	2.2	2.0	108	70-130 %	Pass	
Pyrene	mg/kg	2.2	2.0	109	70-130 %	Pass	
Sum of PAHs	mg/kg	33	32.0	104	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	96			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	103			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	106			70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1403030 [Spike of 1401596]							
2600 PCBs in Soil by GC			Spike Value	Percent Recovery			
Aroclor 1016	mg/kg	2.2	2.0	112	70-130 %	Pass	
Aroclor 1221	mg/kg	<0.5	N/A	N/A	N/A	N/A	
Aroclor 1232 and 1242 as total	mg/kg	<1	N/A	N/A	N/A	N/A	
Aroclor 1248 and 1254 as total	mg/kg	2.5	2.0	123	70-130 %	Pass	
Aroclor 1260	mg/kg	2.2	2.0	109	70-130 %	Pass	
Total Polychlorinated biphenyls	mg/kg	6.9	N/A	N/A	N/A	N/A	
Decachlorobiphenyl - PCB surrogate	%	104			70-130 %	Pass	
1403031 [Spike of 1401596]							Q13
2800 Individual Phenols in Soil by GC			Spike Value	Percent Recovery			
2,3,4,6-Tetrachlorophenol	mg/kg	2.5	4.0	63	50-130 %	Pass	
2,3,4-Trichlorophenol	mg/kg	3.2	4.0	80	50-130 %	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	1.8	N/A	N/A	N/A	N/A	
2,3,5-Trichlorophenol	mg/kg	3.3	4.0	82	50-130 %	Pass	
2,3,6-Trichlorophenol	mg/kg	3.6	4.0	90	50-130 %	Pass	
2,3-Dichlorophenol	mg/kg	6.7	N/A	N/A	N/A	N/A	
2,4&2,5-Dichlorophenol	mg/kg	7.4	8.0	92	50-130 %	Pass	
2,4,6-Trichlorophenol	mg/kg	2.8	4.0	71	50-130 %	Pass	
2,6-Dichlorophenol	mg/kg	4.3	4.0	108	50-130 %	Pass	
2-Chlorophenol	mg/kg	4.6	4.0	114	50-130 %	Pass	
2-Methylphenol	mg/kg	3.6	4.0	91	50-130 %	Pass	
3,4-Dichlorophenol	mg/kg	2.7	4.0	68	50-130 %	Pass	
3,5-Dichlorophenol	mg/kg	4.2	4.0	106	50-130 %	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	8.7	8.0	109	50-130 %	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	7.5	8.0	94	50-130 %	Pass	
4-Chloro-3-methylphenol	mg/kg	4.0	4.0	99	50-130 %	Pass	
Pentachlorophenol	mg/kg	3.1	N/A	N/A	N/A	N/A	
Phenol	mg/kg	4.8	4.0	118	50-130 %	Pass	
2,4,6-Tribromophenol-Surrogate	%	62			50-130 %	Pass	
1403032 [Spike of 1401595]							
2880 Phthalates in Soil by GC			Spike Value	Percent Recovery			
bis (2-ethylhexyl) phthalate	mg/kg	2.1	2.0	106	70-130 %	Pass	
Butyl benzyl phthalate	mg/kg	2.1	2.0	106	70-130 %	Pass	
Dibutyl phthalate	mg/kg	2.0	2.0	100	70-130 %	Pass	
Diethyl phthalate	mg/kg	1.9	2.0	94	70-130 %	Pass	
Dimethyl phthalate	mg/kg	2.0	2.0	100	70-130 %	Pass	
Di-n-octyl phthalate	mg/kg	2.0	2.0	100	70-130 %	Pass	
Total Phthalate	mg/kg	12	12.0	101	70-130 %	Pass	
1403033 [Spike of 1401596]							
2000 TPH (C10 - C36) in Soil by GC			Spike Value	Percent Recovery			
C10-C14 Fraction	mg/kg	130	125.0	96	70-130 %	Pass	
C15-C28 Fraction	mg/kg	130	125.0	98	70-130 %	Pass	
C29-C36 Fraction	mg/kg	100	125.0	84	70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1404385 [Method Blank]							
1100 BTEX in Soil by P&T							
Benzene	mg/kg	<0.2			< 0.2	Pass	
C6-C9 Fraction	mg/kg	<5			< 5	Pass	
Ethylbenzene	mg/kg	<1			< 1	Pass	
Meta- & Para- Xylene	mg/kg	<2			< 2	Pass	
Ortho-Xylene	mg/kg	<1			< 1	Pass	
Toluene	mg/kg	<1			< 1	Pass	
Total Xylenes	mg/kg	<3			< 3	Pass	
4-Bromofluorobenzene - Surrogate	%	76			70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1404388 [Method Blank]							
1100 BTEX in Soil by P&T							
Benzene	mg/kg	<0.2			< 0.2	Pass	
C6-C9 Fraction	mg/kg	<5			< 5	Pass	
Ethylbenzene	mg/kg	<1			< 1	Pass	
Meta- & Para- Xylene	mg/kg	<2			< 2	Pass	
Ortho-Xylene	mg/kg	<1			< 1	Pass	
Toluene	mg/kg	<1			< 1	Pass	
Total Xylenes	mg/kg	<3			< 3	Pass	
4-Bromofluorobenzene - Surrogate	%	79			70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1408038 [Method Blank]							
1300 VOCs in Soil by P&T							
1,1,1,2-Tetrachloroethane	mg/kg	<1.0			< 1	Pass	
1,1,1-Trichloroethane	mg/kg	<1.0			< 1	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	<1.0			< 1	Pass	
1,1,2-Trichloroethane	mg/kg	<1.0			< 1	Pass	
1,1-Dichloroethane	mg/kg	<1.0			< 1	Pass	
1,1-Dichloroethene	mg/kg	<1.0			< 1	Pass	
1,1-Dichloropropylene	mg/kg	<1.0			< 1	Pass	
1,2,3-Trichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2,3-Trichloropropane	mg/kg	<1.0			< 1	Pass	
1,2,4-Trichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2,4-Trimethylbenzene	mg/kg	<1.0			< 1	Pass	
1,2-Dibromo-3-chloropropane	mg/kg	<1.0			< 1	Pass	
1,2-Dibromoethane	mg/kg	<1.0			< 1	Pass	
1,2-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2-Dichloroethane	mg/kg	<1.0			< 1	Pass	
1,2-Dichloropropane	mg/kg	<1.0			< 1	Pass	
1,3,5-Trimethylbenzene	mg/kg	<1.0			< 1	Pass	
1,3-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,3-Dichloropropane	mg/kg	<1.0			< 1	Pass	
1,4-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
2,2-Dichloropropane	mg/kg	<10.0			< 10	Pass	
2-butanone	mg/kg	<10.0			< 10	Pass	
2-Chlorotoluene	mg/kg	<1.0			< 1	Pass	
4-Chlorotoluene	mg/kg	<1.0			< 1	Pass	
4-methyl-2-pentanone	mg/kg	<10.0			< 10	Pass	
Benzene	mg/kg	<0.2			< 0.2	Pass	
Bromobenzene	mg/kg	<1.0			< 1	Pass	
Bromochloromethane	mg/kg	<1.0			< 1	Pass	
Bromodichloromethane	mg/kg	<1.0			< 1	Pass	
Bromoform	mg/kg	<1.0			< 1	Pass	
Bromomethane	mg/kg	<1.0			< 1	Pass	
Carbon Tetrachloride	mg/kg	<1.0			< 1	Pass	
Chlorobenzene	mg/kg	<1.0			< 1	Pass	
Chloroethane	mg/kg	<1.0			< 1	Pass	
Chloroform	mg/kg	<1.0			< 1	Pass	
Chloromethane	mg/kg	<1.0			< 1	Pass	
cis-1,2-Dichloroethene	mg/kg	<1.0			< 1	Pass	
cis-1,3-Dichloropropene	mg/kg	<1.0			< 1	Pass	
Dibromochloromethane	mg/kg	<1.0			< 1	Pass	
Dibromomethane	mg/kg	<1.0			< 1	Pass	
Dichlorodifluoromethane	mg/kg	<1.0			< 1	Pass	
Ethylbenzene	mg/kg	<1.0			< 1	Pass	
Hexachlorobutadiene	mg/kg	<1.0			< 1	Pass	
Hexachloroethane	mg/kg	<1.0			< 1	Pass	
Isopropylbenzene	mg/kg	<0.5			< 0.5	Pass	
Meta- & Para- Xylene	mg/kg	<2.0			< 2	Pass	
Methylene Chloride	mg/kg	<5.0			< 5	Pass	
Naphthalene	mg/kg	<1.0			< 1	Pass	
n-Butylbenzene	mg/kg	<1.0			< 1	Pass	
n-Propylbenzene	mg/kg	<1.0			< 1	Pass	
Ortho-Xylene	mg/kg	<1.0			< 1	Pass	
Pentachloroethane	mg/kg	<1.0			< 1	Pass	
p-Isopropyltoluene	mg/kg	<1.0			< 1	Pass	
sec-Butylbenzene	mg/kg	<1.0			< 1	Pass	
Styrene	mg/kg	<0.5			< 0.5	Pass	
tert-Butylbenzene	mg/kg	<1.0			< 1	Pass	
Tetrachloroethene	mg/kg	<1.0			< 1	Pass	
Toluene	mg/kg	<1.0			< 1	Pass	
Total Xylenes	mg/kg	<3.0			< 3	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1408038 [Method Blank]							
1300 VOCs in Soil by P&T							
trans-1,2-Dichloroethene	mg/kg	<1.0			< 1	Pass	
trans-1,3-Dichloropropene	mg/kg	<1.0			< 1	Pass	
Trichloroethene	mg/kg	<1.0			< 1	Pass	
Trichlorofluoromethane	mg/kg	<1.0			< 1	Pass	
Vinyl Chloride	mg/kg	<1.0			< 1	Pass	
1404386 [Laboratory Control Sample]							
1100 BTEX in Soil by P&T			Expected Value	Percent Recovery			
Benzene	mg/kg	5.1	5.0	102	70-130 %	Pass	
C6-C9 Fraction	mg/kg	50	50.0	100	70-130 %	Pass	
Ethylbenzene	mg/kg	5.1	5.0	102	70-130 %	Pass	
Meta- & Para- Xylene	mg/kg	11	10.0	108	70-130 %	Pass	
Ortho-Xylene	mg/kg	5.3	5.0	106	70-130 %	Pass	
Toluene	mg/kg	5.1	5.0	102	70-130 %	Pass	
Total Xylenes	mg/kg	16	15.0	107	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	98			70-130 %	Pass	
1404389 [Laboratory Control Sample]							
1100 BTEX in Soil by P&T			Expected Value	Percent Recovery			
Benzene	mg/kg	5.3	5.0	106	70-130 %	Pass	
C6-C9 Fraction	mg/kg	47	50.0	94	70-130 %	Pass	
Ethylbenzene	mg/kg	4.9	5.0	98	70-130 %	Pass	
Meta- & Para- Xylene	mg/kg	10	10.0	105	70-130 %	Pass	
Ortho-Xylene	mg/kg	5.0	5.0	100	70-130 %	Pass	
Toluene	mg/kg	5.4	5.0	108	70-130 %	Pass	
Total Xylenes	mg/kg	16	15.0	103	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	94			70-130 %	Pass	
1408040 [Laboratory Control Sample]							
1300 VOCs in Soil by P&T			Expected Value	Percent Recovery			
1,1,1-Trichloroethane	mg/kg	10	10.0	103	70-130 %	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	7.9	10.0	79	70-130 %	Pass	
1,1,2-Trichloroethane	mg/kg	9.6	10.0	96	70-130 %	Pass	
1,1-Dichloroethane	mg/kg	9.8	10.0	98	70-130 %	Pass	
1,1-Dichloroethene	mg/kg	9.2	10.0	92	70-130 %	Pass	
1,2-Dichlorobenzene	mg/kg	9.9	10.0	99	70-130 %	Pass	
1,2-Dichloroethane	mg/kg	9.2	10.0	92	70-130 %	Pass	
1,2-Dichloropropane	mg/kg	9.9	10.0	99	70-130 %	Pass	
1,3-Dichlorobenzene	mg/kg	10	10.0	105	70-130 %	Pass	
1,4-Dichlorobenzene	mg/kg	11	10.0	107	70-130 %	Pass	
Benzene	mg/kg	10	10.0	103	70-130 %	Pass	
Bromodichloromethane	mg/kg	9.1	10.0	91	70-130 %	Pass	
Bromoform	mg/kg	8.2	10.0	82	70-130 %	Pass	
Carbon Tetrachloride	mg/kg	10	10.0	101	70-130 %	Pass	
Chlorobenzene	mg/kg	11	10.0	107	70-130 %	Pass	
Chloroform	mg/kg	10	10.0	101	70-130 %	Pass	
cis-1,3-Dichloropropene	mg/kg	9.9	10.0	99	70-130 %	Pass	
Dibromochloromethane	mg/kg	8.9	10.0	89	70-130 %	Pass	
Ethylbenzene	mg/kg	11	10.0	111	70-130 %	Pass	
Methylene Chloride	mg/kg	8.6	10.0	86	70-130 %	Pass	
Tetrachloroethene	mg/kg	11	10.0	109	70-130 %	Pass	
Toluene	mg/kg	12	10.0	116	70-130 %	Pass	
trans-1,2-Dichloroethene	mg/kg	9.1	10.0	91	70-130 %	Pass	
trans-1,3-Dichloropropene	mg/kg	9.4	10.0	94	70-130 %	Pass	
Trichloroethene	mg/kg	10	10.0	104	70-130 %	Pass	
1402986 [Duplicate of 1401594]							
1100 TPH (C6-C9) in Soil by P&T			Result 2	RPD			
C6-C9 Fraction	mg/kg	<5.0	<5.0	<1	0-30 %	Pass	
4-Bromofluorobenzene - Surrogate	%	112			70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1402987 [Duplicate of 1401595]							
1100 TPH (C6-C9) in Soil by P&T			Result 2	RPD			
C6-C9 Fraction	mg/kg	<5.0	<5.0	<1	0-30 %	Pass	
4-Bromofluorobenzene - Surrogate	%	103			70-130 %	Pass	
1403023 [Spike of 1401596]							
1100 TPH (C6-C9) in Soil by P&T			Spike Value	Percent Recovery			
C6-C9 Fraction	mg/kg	58	50.0	110	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	108			70-130 %	Pass	

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1402014 [Method Blank]							
4270 Total Cyanide in Soil Colourmetric							
Total Cyanide	mg/kg	<0.1			< 0.1	Pass	
1402017 [Laboratory Control Sample]							
4270 Total Cyanide in Soil Colourmetric			Expected Value	Percent Recovery			
Total Cyanide	mg/kg	0.5	0.5	98	70-130 %	Pass	
1404191 [Laboratory Control Sample]							
4230 Hexavalent Chromium in Soil			Expected Value	Percent Recovery			
Chromium (VI)	mg/kg	13	12.0	106	70-130 %	Pass	

Report Results Information

Total Fluoride	Envirolab, Accreditation: 2901, report number 26554.

Sample Integrity

Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
Q13	Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. For any failed elements; positive results in blind samples can only be used as a guide. All other QC has passed in this test batch.

Authorised By

Alex Petridis	Senior Analyst - SVOC	
Carol Cawrse	Client Services Officer	
Elizabeth Davison	Client Services Officer	
Barry Blythman	Senior Analyst - VOC	Accreditation Number: 1645
Mark Herbstreit	Senior Analyst - Metals	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Olga Alieva	Analyst - SVOC	Accreditation Number: 1645
Patricia Hua	Senior Analyst	Accreditation Number: 1645

Laboratory Manager

David Elliott	Laboratory Manager - Melbourne

Final Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Laboratory staff.

Sample Receipt Advice

LabMark
ENVIRONMENTAL LABORATORIES

Customer Service - 1300 552 389

Client Name:	OTEK AUSTRALIA PTY LTD	**Date Received:**	10 February 2009
Attention:	Christian Beasley	**Due Date:**	17 February 2009
Client Reference number:	3106004 Werribee Area 4A ESA	**Turnaround:**	Standard

Laboratory Reference Number:	09ENME0004793	**Your Laboratory Contact:**	Ruth Callander +61 3 9538 2277

If you have any queries regarding turnaround and sample progress, technical queries or wish to make changes please contact the laboratory immediately.

Job Information

Sample Integrity	
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Analysis Requested

Analysis Requested	Method Code	Number Of Samples
TPH (C6-C9) in Soil by P&T	1100	11
Hexavalent Chromium in Soil	4230	1
Total Cyanide in Soil Colourmetric	4270	1
Phenoxy Herbicides in Soil by HPLC	2920	10
Mercury in Soil by FIMS	3400	14
Dissolved Mercury in Water by FIMS	3400	1
Total Metals in Soil By ICP/MS	3100	14
Dissolved Metals in Water By ICP/MS	3100	1
Moisture Content	5000	14
OC Pesticides in Soil by GC-MS	2200	11
OP Pesticides in Soil by GC	2400	10
PAH in Soil by GC	2100	11
PCBs in Soil by GC	2600	11
Individual Phenols in Soil by GC	2800	11
Phthalates in Soil by GC	2880	10
Total Fluoride	0000	1
TPH (C10 - C36) in Soil by GC	2000	11
VOCs in Soil by P&T	1300	1

Note

- Turn Around Time starts when samples are received at the Laboratory
- For samples received after 4pm, Turn Around Time starts the next working day
- For samples received on the last day of holding time, notification of testing requirements must be given at least 6 hours prior to the sample receipt deadlines; Should the laboratory not receive the information in the required timeframe a suitably qualified results may still be reported.
- Surcharges may apply for 24, 48 and 72 hour turnaround.
- Water samples will be discarded after 4 weeks unless notified.
- Soil samples are chilled for 1 month and will be discarded after 3 months unless notified.
- Samples submitted for Micro analysis on a Friday may incur a $150 surcharge and / or be analysed outside holding time (24 Hour Holding Time).
- The Quoted Due Date does not apply to sub-contracted tests or some in-house tests. Contact your Customer Support Officer for details
  NOTE: Unless advised otherwise - Sample analysis will commence regardless of integrity issues and / or non-conformance and these will be recorded on the final report.

Logged in by : Michael Cassidy

Date : Wed 11 February 2009

CHAIN OF CUSTODY & ANALYSIS REQUEST

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

LABMARK Environmental
1868 Dandenong Road, Clayton
Ruth Callander
9538 2277

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: cbeasley@otek.com.au

LAB QUOTE REF: Q0058.EM | OTEK PO No.: 35500

PROJECT # 3106004 | PROJECT NAME: Werribee Area 4A ESA

COLLECTORS NAME: Christian Beasley cbeasley@otek.com.au | LAB JOB #

REMARKS: STANDARD 1 WEEK TURN AROUND

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below)* Std	BTEX Std	TPH (C8-C36) Std	Pb Std	PAH/Phenols Std	PAH Std	PHENOLS Std	SVOCs Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	EPA 448.3 Screen Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	ETHYLENE GLYCOL Std	PHOSPHOROUS Std	RADIUM Std	SULPHATE Std	TRITIUM Std	VCH Std	ON HOLD
											9-Feb-09	1															X												
4A/B-8/0.25	0.25			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/0.5	0.5			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/1.0	1.0			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/2.0	2.0			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/3.0	3.0			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/4.0	4.0			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/5.0	5.0			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/6.0	6.0			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/7.0	7.0			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/8.0	8.0			X			X				9-Feb-09	1		X		X			X	X	X																		
4A/B-8/9.0	9.0			X			X				9-Feb-09	1		X																									X
4A/B-8/10.0	10.0			X			X				9-Feb-09	1																											
4A/B-8/11	11.0			X			X				9-Feb-09	1		X																									X
4A/B-8/12	12.0			X			X				9-Feb-09	1																											X
4A/B-8/13	13.0			X			X				9-Feb-09	1																											X
4A/B-8/14	14.0			X			X				9-Feb-09	1																											X
4A/B-8/15	15.0			X			X				9-Feb-09	1																											
4A/B-8/16	16.0			X			X				9-Feb-09	1																											
4A/B-8/TB-1			x				x				9-Feb-09	1		X																									
4A/B-8/QS-1				X			X				9-Feb-09	1		X																									
This Page			18				19						20	14		10				10	10	10					1											5	

05ENME0004793-1(1401593)
OTEK_MLB(4A/B-8/0.25)

Relinquished by:	Date	Time	Received by:	Date	Time	Custody Seals Intact?
C Beasley	10/02/09			10/02	11.40	
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?

Additional Comments:
* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

MSC Labmark 10/2/09 13:25

From:	Natalie Krasselt
To:	Catherine Crilly
Subject:	FW: Labmark 09ENME0004793
Date:	Thursday, 24 March 2011 11:39:51 AM

Hi Catherine,

Unfortunately MGTLabmark are not able to update any old reports sent by Labmark as per email below. Sorry for the inconvenience.

Kind regards,

Natalie Krasselt
Client Services
nataliek@mgtenv.com.au

mgt LabMark ENVIRONMENTAL LABORATORIES
3-5 Kingston Town Close
Oakleigh, Vic, 3166
T:(+61) (3) 9564 7055
F:(+61) (3) 9564 7190

From: Floris VanRhyn
Sent: Thursday, 24 March 2011 11:30 AM
To: Natalie Krasselt
Subject: RE: Labmark 09ENME0004793

Natalie,

Unfortunately this not possible at all - LABWARE version 5 that was set up to do the old Labmark reports no longer exists – reason is that Labmark was sold to MGT without the software at the beginning of 2010 as MGT already had a LIMS in place – and on which we are operating now. We only have the data in PDF and Excel formats that we can provide.

Sorry – can not help with any changes.

Regards,
Floris

From: Natalie Krasselt
Sent: Thursday, March 24, 2011 11:23 AM
To: Floris VanRhyn
Subject: FW: Labmark 09ENME0004793

Floris,

Can we re-create old Labmark reports as a client has requested to change a sample ID?

Thanks,

Natalie Krasselt
Client Services
nataliek@mgtenv.com.au

mgt LabMark ENVIRONMENTAL LABORATORIES
3-5 Kingston Town Close

Oakleigh, Vic, 3166
T:(+61) (3) 9564 7055
F:(+61) (3) 9564 7190

From: Catherine Crilly [mailto:CCrilly@otek.com.au]
Sent: Thursday, 24 March 2011 10:20 AM
To: Natalie Krasselt
Subject: Labmark 09ENME0004793

Good Morning Natalie,

Further to our phone conversation I am writing to request sample IDs on labMark job order 09ENME0004793 be changed from '4A/B-8/...' to 4A/B-7/...'

There are a total of 20 individual samples, 13 were analysed plus a Trip Blank and Duplicate sample.
Thanks for your assistance Natalie.

Kind regards,

Catherine Crilly - Casual Environmental Scientist

Practical Environmental Solutions

T: 03 9095 1943 (Direct) T: 03 9525 5155 (Switch) F: 03 9593 8555

E: ccrilly@otek.com.au W: www.otek.com.au

A: Level 1, 222 St Kilda Road, St Kilda VIC 3182

DATA VALIDATION REPORT

Project Name:	Werribee Area 4, Sub-Area 4A	**Validation Conducted by:**	KJB
Project Number:	3106004	**Signed & Dated:**	18/05/2010
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	Labmark/Amdel	**Secondary Laboratory:**	ALS	**Soil**
Batch Number:	09ENME0005084	**Batch Number:**	EM0901295	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
11	1	1	2

Have the Following Criteria Been Met? (Shade)

Blind Replicate	**OK if >5%**	18.182
Split Sample	**OK if >5%**	18.182
Blank Samples	**OK**	2

1	Rinsate
0	Field
1	Trip

Explain any Discrepancies:

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		**Field Secondary Duplicates (Split)**	
1	**Number obtained**	**1**	
4A/QS-12	**Sample Identification**	**4A/QS-12A**	
18	**Total Number of Analytes**	18	**B**
2	**No. of analytes with RPD >50% (Fail)**	3	
16	**Number of analytes <50% (Pass)**	15	
88.9	**% Pass**	83.3	
A			

Explain any Discrepancies:

4A/QS-12 exceedences for Cobolt and Mercury with RPD's 90% and 100% respectively.

4A/QS-12A exceedences of Boron, Cobolt and Mercury with RPD's of 183%, 70%, 108% respectively.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	**Field**	**Rinsate**
Total Number	1		1
Sample Identifictaion	4A/TB-11		4A/RB-11
Number of Analytes	18		18
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Validation Conducted by: KJB

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	19	3
	No. Fails	0	0
Analysis	**No. Passes**	22	4
	No. Fails	0	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	**F**	**G**
	Primary	**Secondary**
TOTAL # Analytes of DUP Samples	25	40
# samples RPD >50% **(FAIL)**	0	0
% Pass	100	100

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Method Blank Analysis (MB)	**H**	**I**
	Primary	**Secondary**
TOTAL # Analytes	222	18
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery	**J**	**K**
(LCS, LS)	**Primary**	**Secondary**
TOTAL # Analytes	150	9
# analytes outside range i.e <70% or >130% **(FAIL)**	2	0
% Pass	99	100

Surrogates

OK (>95%)	99
NOT OK (<95%)	

Explanation for Failures:

Laboratory Internal Matrix Spike Recovery	**L**	**M**
	Primary	**Secondary**
TOTAL # Analytes	18	11
# Analytes outside range i.e <70% or >130%	0	0
% Pass	100	100

Internal Spikes

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Matrix Spike not determined for Zinc and Manganese for 4A/QS-12A because background levels were greater than or equal to 4 times the spike level

FINAL DATA

	Sample Type	**Total Data Quality Objective Fails**	**Total Number of Results**	**% Data Quality Objective Passes**
A	**Primary Duplicates**	2	18	88.9
B	**Secondary Duplicates**	3	18	83.3
C	**Trip Blanks**	0	18	100.0
D	**Field Blanks**	0	0	-
E	**Rinsate Blanks**	0	18	100.0
F & G	**Lab Internal Duplicates**	0	65	100.0
H & I	**Lab Method Blanks**	0	240	100.0
J & K	**Lab Internal Spike Recoveries**	2	159	98.7
L & M	**Laboratory Spike Recoveries**	0	29	100.0
	Total	**7**	**565**	**98.8**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025
Accreditation Number: 1645

LabMark
ENVIRONMENTAL LABORATORIES

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

OTEK Australia
INSPECTION VERIFICATION RECORD
PASS ✓ FAIL
NAME (Print) MIKE DALIA
SIGNATURE
DATE 30-4-09

Attention: Tom Santwyk-Anderson

Project	**09ENME0005084**
Client Reference	3106004
	Werribee Area 4
Order Number	39466
Received Date	13/02/2009 12:20:00 PM

Customer Sample ID			**4A/T1B/0.25**	**4A/T1B/0.5**	**4A/T1B/1.0**	**4A/T2B/0.25**	**4A/T2B/1.0**
Sample Matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Labmark Sample No.			**1405430**	**1405431**	**1405432**	**1405434**	**1405436**
Date Sampled			**13/02/2009**	**13/02/2009**	**13/02/2009**	**13/02/2009**	**13/02/2009**
Test/Reference	PQL	Unit					
0000 Asbestos in Soil							
Asbestos	-		Not detecteed	-	-	Not detecteed	-
SVOC							
Test/Reference	PQL	Unit					
2920 Phenoxy Herbicides in Soil by HPLC							
2,4,5-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	-	-	-	<0.5	-
2,4,5-Trichlorophenoxy-propanoic acDB	0.5	mg/kg	-	-	-	<0.5	-
2,4,6-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	-	-	-	<0.5	-
2,4-Dichlorophenoxy propanoic acidDB	0.5	mg/kg	-	-	-	<0.5	-
2,4-Dichlorophenoxy-acetic acid (24DB	0.5	mg/kg	-	-	-	<0.5	-
2,4-Dichlorophenoxy-butanoic acid (DB	0.5	mg/kg	-	-	-	<0.5	-
2-Chlorophenoxy acetic acid (2-CPDB	0.5	mg/kg	-	-	-	<0.5	-
2-Methyl-4-chlorophenoxy-acetic acDB	0.5	mg/kg	-	-	-	<0.5	-
2-Methyl-4-chlorophenoxy butanoic aDB	0.5	mg/kg	-	-	-	<0.5	-
4-Chlorophenoxy acetic acidDB	0.5	mg/kg	-	-	-	<0.5	-
DicambaDB	0.5	mg/kg	-	-	-	<0.5	-
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	-	-	-	<0.5	-
a-Chlordane	0.5	mg/kg	-	-	-	<0.5	-
a-Endosulfan	0.5	mg/kg	-	-	-	<0.5	-
Aldrin	0.5	mg/kg	-	-	-	<0.5	-
b-BHC	0.5	mg/kg	-	-	-	<0.5	-
b-Endosulfan	0.5	mg/kg	-	-	-	<0.5	-
d-BHC	0.5	mg/kg	-	-	-	<0.5	-
DDD	0.5	mg/kg	-	-	-	<0.5	-
DDE	0.5	mg/kg	-	-	-	<0.5	-
DDT	0.5	mg/kg	-	-	-	<0.5	-
Dieldrin	0.5	mg/kg	-	-	-	<0.5	-
Endosulfan sulfate	0.5	mg/kg	-	-	-	<0.5	-
Endrin	0.5	mg/kg	-	-	-	<0.5	-
Endrin Aldehyde	0.5	mg/kg	-	-	-	<0.5	-
g-BHC	0.5	mg/kg	-	-	-	<0.5	-

Customer Sample ID			4A/T1B/0.25	4A/T1B/0.5	4A/T1B/1.0	4A/T2B/0.25	4A/T2B/1.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1405430	1405431	1405432	1405434	1405436
Date Sampled			13/02/2009	13/02/2009	13/02/2009	13/02/2009	13/02/2009
SVOC							
Test/Reference	PQL	Unit					
g-Chlordane	0.5	mg/kg	-	-	-	<0.5	-
Heptachlor	0.5	mg/kg	-	-	-	<0.5	-
Heptachlor epoxide	0.5	mg/kg	-	-	-	<0.5	-
Hexachlorobenzene (HCB)	0.5	mg/kg	-	-	-	<0.5	-
Methoxychlor	0.5	mg/kg	-	-	-	<0.5	-
Oxychlordane	0.5	mg/kg	-	-	-	<0.5	-
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	-	-	-	106	-
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	-	-	-	<0.5	-
Chlorpyrifos Methyl	0.5	mg/kg	-	-	-	<0.5	-
Diazinon	0.5	mg/kg	-	-	-	<0.5	-
Ethion	0.5	mg/kg	-	-	-	<0.5	-
Fenitrothion	0.5	mg/kg	-	-	-	<0.5	-
Fenthion	0.5	mg/kg	-	-	-	<0.5	-
Malathion	0.5	mg/kg	-	-	-	<0.5	-
Methyl Parathion	0.5	mg/kg	-	-	-	<0.5	-
Parathion	0.5	mg/kg	-	-	-	<0.5	-
Ronnel	0.5	mg/kg	-	-	-	<0.5	-
Triphenyl Phosphate - OPP SURROGATE	1	%	-	-	-	110	-
2100 PAH in Soil by GC							
Acenaphthene	0.5	mg/kg	-	-	-	<0.5	-
Acenaphthylene	0.5	mg/kg	-	-	-	<0.5	-
Anthracene	0.5	mg/kg	-	-	-	<0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	-	<0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	-	<0.5	-
Benzo(b)&(k)fluoranthene	1	mg/kg	-	-	-	<1	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	<0.5	-
Chrysene	0.5	mg/kg	-	-	-	<0.5	-
Dibenz(ah)anthracene	0.5	mg/kg	-	-	-	<0.5	-
Fluoranthene	0.5	mg/kg	-	-	-	<0.5	-
Fluorene	0.5	mg/kg	-	-	-	<0.5	-
Indeno(123-cd)pyrene	0.5	mg/kg	-	-	-	<0.5	-
Naphthalene	0.5	mg/kg	-	-	-	<0.5	-
Phenanthrene	0.5	mg/kg	-	-	-	<0.5	-
Pyrene	0.5	mg/kg	-	-	-	<0.5	-
Sum of PAHs	0.5	mg/kg	-	-	-	<0.5	-
2-Fluorobiphenyl - Surrogate	-	%	-	-	-	100	-
p-Terphenyl-D14 - Surrogate	-	%	-	-	-	110	-
Anthracene-d10 - Surrogate	-	%	-	-	-	102	-
2600 PCBs in Soil by GC							
Aroclor 1016DB	0.5	mg/kg	-	-	-	<0.5	-
Aroclor 1221DB	0.5	mg/kg	-	-	-	<0.5	-
Aroclor 1232 and 1242 as totalDB	1	mg/kg	-	-	-	<1	-
Aroclor 1248 and 1254 as totalDB	1	mg/kg	-	-	-	<1	-
Aroclor 1260DB	0.5	mg/kg	-	-	-	<0.5	-
Total Polychlorinated biphenylsDB	1	mg/kg	-	-	-	<1	-
Decachlorobiphenyl - PCB surrogate	1	%	-	-	-	90	-
2800 Individual Phenols in Soil by GC							

Customer Sample ID			4A/T1B/0.25	4A/T1B/0.5	4A/T1B/1.0	4A/T2B/0.25	4A/T2B/1.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1405430	1405431	1405432	1405434	1405436
Date Sampled			13/02/2009	13/02/2009	13/02/2009	13/02/2009	13/02/2009
SVOC							
Test/Reference	PQL	Unit					
2,3,4,6-Tetrachlorophenol	1	mg/kg	-	-	-	<1	-
2,3,4-Trichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2,3,5,6-Tetrachlorophenol	1	mg/kg	-	-	-	<1	-
2,3,5-Trichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2,3,6-Trichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2,3-Dichlorophenol	1	mg/kg	-	-	-	<1	-
2,4 & 2,5-Dichlorophenol	2	mg/kg	-	-	-	<2	-
2,4,6-Trichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2,6-Dichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2-Chlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2-Methylphenol	0.5	mg/kg	-	-	-	<0.5	-
3,4-Dichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
3,5-Dichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
3-Chlorophenol & 4-Chlorophenol	1	mg/kg	-	-	-	<1	-
3-Methylphenol & 4-Methylphenol	1	mg/kg	-	-	-	<1	-
4-Chloro-3-methylphenol	0.5	mg/kg	-	-	-	<0.5	-
Pentachlorophenol	1	mg/kg	-	-	-	<1	-
Phenol	0.5	mg/kg	-	-	-	<0.5	-
2,4,6-Tribromophenol-Surrogate	1	%	-	-	-	50	-
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	0.5	mg/kg	-	-	-	<0.5	-
Butyl benzyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Dibutyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Diethyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Dimethyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Di-n-octyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Total Phthalate	3.0	mg/kg	-	-	-	<3.0	-
Metals							
Test/Reference	PQL	Unit					
3400 Mercury in Soil by FIMS							
Mercury	0.01	mg/kg	<0.01	0.03	0.01	0.02	-
3100 Total Metals in Soil By ICP/MS							
Antimony	2	mg/kg	<2	<2	<2	<2	-
Arsenic	2	mg/kg	5.5	5.4	5.1	5.8	-
Barium	2	mg/kg	47	53	57	67	-
Beryllium	2	mg/kg	<2	<2	<2	<2	-
Boron	2	mg/kg	3.2	2.2	3.5	2.5	-
Cadmium	2	mg/kg	<2	<2	<2	<2	-
Chromium	2	mg/kg	46	47	29	44	-
Cobalt	2	mg/kg	8.6	29	12	13	-
Copper	2	mg/kg	17	18	16	20	-
Lead	2	mg/kg	12	12	11	13	-
Manganese	2	mg/kg	180	240	270	220	-
Molybdenum	2	mg/kg	<2	<2	<2	<2	-
Nickel	2	mg/kg	26	28	26	30	-
Selenium	2	mg/kg	<2	<2	<2	<2	-
Tin	2	mg/kg	<2	<2	<2	<2	-
Vanadium	2	mg/kg	46	39	34	45	-
Zinc	2	mg/kg	38	34	42	40	-

Customer Sample ID			4A/T1B/0.25	4A/T1B/0.5	4A/T1B/1.0	4A/T2B/0.25	4A/T2B/1.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1405430	1405431	1405432	1405434	1405436
Date Sampled			13/02/2009	13/02/2009	13/02/2009	13/02/2009	13/02/2009
Inorganics							
Test/Reference	PQL	Unit					
4300 Anions in Soil by IC							
Fluoride (Soluble)	2	mg/kg	<2	-	13	-	-
Nitrate as N (Soluble)	2	mg/kg	<2	-	<2	<2	<2
4520 Ammonia in Soil by Titration							
Ammonia as N	2	mg/kg	<2	-	<2	<2	<2
4000 pH in Soil							
pH	0.1	pH	6.4	5.6	8.9	7.5	9.0
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	5	5	6	8	7
Micro							
Test/Reference	PQL	Unit					
6621 E. coli by MPN							
E. coli*	-	MPNorgs/g	<1	-	<1	<1	<1

Customer Sample ID			4A/T3B/0.25	4A/T3B/0.5	Q13 4A/T3B/1.0	4A/T3B/2.0	4A/RB-11
Sample Matrix			SOIL	SOIL	SOIL	SOIL	WATER
Labmark Sample No.			1405437	1405438	1405439	1405441	1405442
Date Sampled			13/02/2009	13/02/2009	13/02/2009	13/02/2009	13/02/2009
Test/Reference	PQL	Unit					
0000 Asbestos in Soil							
Asbestos	-		Not detecteed	-	-	-	-
VOC							
Test/Reference	PQL	Unit					
1100 TPH (C6-C9) in Soil by P&T							
4-Bromofluorobenzene - Surrogate	-	%	91	-	-	-	-
C6-C9 Fraction	5	mg/kg	<5.0	-	-	-	-
1300 VOCs in Soil by P&T							
Pentafluorobenzene-Surrogate	1	%	114	-	-	-	-
Toluene-D8 - Surrogate	1	%	83	-	-	-	-
4-Bromofluorobenzene - Surrogate	1	%	86	-	-	-	-
Dichlorodifluoromethane	1	mg/kg	<1.0	-	-	-	-
Chloromethane	1	mg/kg	<1.0	-	-	-	-
Vinyl Chloride	1	mg/kg	<1.0	-	-	-	-
Bromomethane	1	mg/kg	<1.0	-	-	-	-
Chloroethane	1	mg/kg	<1.0	-	-	-	-
Trichlorofluoromethane	1	mg/kg	<1.0	-	-	-	-
1,1-Dichloroethene	1	mg/kg	<1.0	-	-	-	-
Methylene Chloride	5	mg/kg	<5.0	-	-	-	-
trans-1,2-Dichloroethene	1	mg/kg	<1.0	-	-	-	-
1,1-Dichloroethane	1	mg/kg	<1.0	-	-	-	-
2-butanone	10	mg/kg	<10.0	-	-	-	-
cis-1,2-Dichloroethene	1	mg/kg	<1.0	-	-	-	-
Bromochloromethane	1	mg/kg	<1.0	-	-	-	-
Chloroform	1	mg/kg	<1.0	-	-	-	-
2,2-Dichloropropane	10	mg/kg	<10.0	-	-	-	-
1,2-Dichloroethane	1	mg/kg	<1.0	-	-	-	-

Customer Sample ID			4A/T3B/0.25	4A/T3B/0.5	Q13 4A/T3B/1.0	4A/T3B/2.0	4A/RB-11
Sample Matrix			SOIL	SOIL	SOIL	SOIL	WATER
Labmark Sample No.			1405437	1405438	1405439	1405441	1405442
Date Sampled			13/02/2009	13/02/2009	13/02/2009	13/02/2009	13/02/2009
VOC							
Test/Reference	PQL	Unit					
1,1,1-Trichloroethane	1	mg/kg	<1.0	-	-	-	-
1,1-Dichloropropylene	1	mg/kg	<1.0	-	-	-	-
Carbon Tetrachloride	1	mg/kg	<1.0	-	-	-	-
Benzene	0.2	mg/kg	<0.2	-	-	-	-
Dibromomethane	1	mg/kg	<1.0	-	-	-	-
1,2-Dichloropropane	1	mg/kg	<1.0	-	-	-	-
Trichloroethene	1	mg/kg	<1.0	-	-	-	-
Bromodichloromethane	1	mg/kg	<1.0	-	-	-	-
cis-1,3-Dichloropropene	1	mg/kg	<1.0	-	-	-	-
4-methyl-2-pentanone	10	mg/kg	<10.0	-	-	-	-
trans-1,3-Dichloropropene	1	mg/kg	<1.0	-	-	-	-
1,1,2-Trichloroethane	1	mg/kg	<1.0	-	-	-	-
Toluene	1	mg/kg	<1.0	-	-	-	-
1,3-Dichloropropane	1	mg/kg	<1.0	-	-	-	-
Dibromochloromethane	1	mg/kg	<1.0	-	-	-	-
1,2-Dibromoethane	1	mg/kg	<1.0	-	-	-	-
Tetrachloroethene	1	mg/kg	<1.0	-	-	-	-
1,1,1,2-Tetrachloroethane	1	mg/kg	<1.0	-	-	-	-
Chlorobenzene	1	mg/kg	<1.0	-	-	-	-
Ethylbenzene	1	mg/kg	<1.0	-	-	-	-
Meta- & Para- Xylene	2	mg/kg	<2.0	-	-	-	-
Bromoform	1	mg/kg	<1.0	-	-	-	-
Styrene	0.5	mg/kg	<0.5	-	-	-	-
1,1,2,2-Tetrachloroethane	1	mg/kg	<1.0	-	-	-	-
Ortho-Xylene	1	mg/kg	<1.0	-	-	-	-
1,2,3-Trichloropropane	1	mg/kg	<1.0	-	-	-	-
Isopropylbenzene	0.5	mg/kg	<0.5	-	-	-	-
Bromobenzene	1	mg/kg	<1.0	-	-	-	-
n-Propylbenzene	1	mg/kg	<1.0	-	-	-	-
2-Chlorotoluene	1	mg/kg	<1.0	-	-	-	-
4-Chlorotoluene	1	mg/kg	<1.0	-	-	-	-
1,3,5-Trimethylbenzene	1	mg/kg	<1.0	-	-	-	-
Pentachloroethane	1	mg/kg	<1.0	-	-	-	-
tert-Butylbenzene	1	mg/kg	<1.0	-	-	-	-
1,2,4-Trimethylbenzene	1	mg/kg	<1.0	-	-	-	-
sec-Butylbenzene	1	mg/kg	<1.0	-	-	-	-
1,3-Dichlorobenzene	1	mg/kg	<1.0	-	-	-	-
1,4-Dichlorobenzene	1	mg/kg	<1.0	-	-	-	-
p-Isopropyltoluene	1	mg/kg	<1.0	-	-	-	-
1,2-Dichlorobenzene	1	mg/kg	<1.0	-	-	-	-
n-Butylbenzene	1	mg/kg	<1.0	-	-	-	-
1,2-Dibromo-3-chloropropane	1	mg/kg	<1.0	-	-	-	-
Hexachloroethane	1	mg/kg	<1.0	-	-	-	-
1,2,4-Trichlorobenzene	1	mg/kg	<1.0	-	-	-	-
Naphthalene	1	mg/kg	<1.0	-	-	-	-
Hexachlorobutadiene	1	mg/kg	<1.0	-	-	-	-
1,2,3-Trichlorobenzene	1	mg/kg	<1.0	-	-	-	-
Total Xylenes	3	mg/kg	<3.0	-	-	-	-
SVOC							

Customer Sample ID			4A/T3B/0.25	4A/T3B/0.5	Q13 4A/T3B/1.0	4A/T3B/2.0	4A/RB-11
Sample Matrix			SOIL	SOIL	SOIL	SOIL	WATER
Labmark Sample No.			1405437	1405438	1405439	1405441	1405442
Date Sampled			13/02/2009	13/02/2009	13/02/2009	13/02/2009	13/02/2009
SVOC							
Test/Reference	PQL	Unit					
2920 Phenoxy Herbicides in Soil by HPLC							
2,4,5-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	<0.5	-	<0.5	-	-
2,4,5-Trichlorophenoxy-propanoic acDB	0.5	mg/kg	<0.5	-	<0.5	-	-
2,4,6-Trichlorophenoxy-acetic acidDB	0.5	mg/kg	<0.5	-	<0.5	-	-
2,4-Dichlorophenoxy propanoic acidDB	0.5	mg/kg	<0.5	-	<0.5	-	-
2,4-Dichlorophenoxy-acetic acid (24DB	0.5	mg/kg	<0.5	-	<0.5	-	-
2,4-Dichlorophenoxy-butanoic acid (DB	0.5	mg/kg	<0.5	-	<0.5	-	-
2-Chlorophenoxy acetic acid (2-CPDB	0.5	mg/kg	<0.5	-	<0.5	-	-
2-Methyl-4-chlorophenoxy-acetic acDB	0.5	mg/kg	<0.5	-	<0.5	-	-
2-Methyl-4-chlorophenoxy butanoic aDB	0.5	mg/kg	<0.5	-	<0.5	-	-
4-Chlorophenoxy acetic acidDB	0.5	mg/kg	<0.5	-	<0.5	-	-
DicambaDB	0.5	mg/kg	<0.5	-	<0.5	-	-
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	<0.5	-	<0.5	-	-
a-Chlordane	0.5	mg/kg	<0.5	-	<0.5	-	-
a-Endosulfan	0.5	mg/kg	<0.5	-	<0.5	-	-
Aldrin	0.5	mg/kg	<0.5	-	<0.5	-	-
b-BHC	0.5	mg/kg	<0.5	-	<0.5	-	-
b-Endosulfan	0.5	mg/kg	<0.5	-	<0.5	-	-
d-BHC	0.5	mg/kg	<0.5	-	<0.5	-	-
DDD	0.5	mg/kg	<0.5	-	<0.5	-	-
DDE	0.5	mg/kg	<0.5	-	<0.5	-	-
DDT	0.5	mg/kg	<0.5	-	<0.5	-	-
Dieldrin	0.5	mg/kg	<0.5	-	<0.5	-	-
Endosulfan sulfate	0.5	mg/kg	<0.5	-	<0.5	-	-
Endrin	0.5	mg/kg	<0.5	-	<0.5	-	-
Endrin Aldehyde	0.5	mg/kg	<0.5	-	<0.5	-	-
g-BHC	0.5	mg/kg	<0.5	-	<0.5	-	-
g-Chlordane	0.5	mg/kg	<0.5	-	<0.5	-	-
Heptachlor	0.5	mg/kg	<0.5	-	<0.5	-	-
Heptachlor epoxide	0.5	mg/kg	<0.5	-	<0.5	-	-
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	-	<0.5	-	-
Methoxychlor	0.5	mg/kg	<0.5	-	<0.5	-	-
Oxychlordane	0.5	mg/kg	<0.5	-	<0.5	-	-
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	108	-	110	-	-
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	<0.5	-	<0.5	-	-
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	-	<0.5	-	-
Diazinon	0.5	mg/kg	<0.5	-	<0.5	-	-
Ethion	0.5	mg/kg	<0.5	-	<0.5	-	-
Fenitrothion	0.5	mg/kg	<0.5	-	<0.5	-	-
Fenthion	0.5	mg/kg	<0.5	-	<0.5	-	-
Malathion	0.5	mg/kg	<0.5	-	<0.5	-	-
Methyl Parathion	0.5	mg/kg	<0.5	-	<0.5	-	-
Parathion	0.5	mg/kg	<0.5	-	<0.5	-	-
Ronnel	0.5	mg/kg	<0.5	-	<0.5	-	-

Customer Sample ID			4A/T3B/0.25	4A/T3B/0.5	Q13 4A/T3B/1.0	4A/T3B/2.0	4A/RB-11
Sample Matrix			SOIL	SOIL	SOIL	SOIL	WATER
Labmark Sample No.			1405437	1405438	1405439	1405441	1405442
Date Sampled			13/02/2009	13/02/2009	13/02/2009	13/02/2009	13/02/2009
SVOC							
Test/Reference	PQL	Unit					
Triphenyl Phosphate - OPP SURROGATE	1	%	115	-	112	-	-
2100 PAH in Soil by GC							
Acenaphthene	0.5	mg/kg	<0.5	-	<0.5	-	-
Acenaphthylene	0.5	mg/kg	<0.5	-	<0.5	-	-
Anthracene	0.5	mg/kg	<0.5	-	<0.5	-	-
Benz(a)anthracene	0.5	mg/kg	<0.5	-	<0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	<0.5	-	<0.5	-	-
Benzo(b)&(k)fluoranthene	1	mg/kg	<1	-	<1	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5	-	<0.5	-	-
Chrysene	0.5	mg/kg	<0.5	-	<0.5	-	-
Dibenz(ah)anthracene	0.5	mg/kg	<0.5	-	<0.5	-	-
Fluoranthene	0.5	mg/kg	<0.5	-	<0.5	-	-
Fluorene	0.5	mg/kg	<0.5	-	<0.5	-	-
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5	-	<0.5	-	-
Naphthalene	0.5	mg/kg	<0.5	-	<0.5	-	-
Phenanthrene	0.5	mg/kg	<0.5	-	<0.5	-	-
Pyrene	0.5	mg/kg	<0.5	-	<0.5	-	-
Sum of PAHs	0.5	mg/kg	<0.5	-	<0.5	-	-
2-Fluorobiphenyl - Surrogate	-	%	98	-	104	-	-
p-Terphenyl-D14 - Surrogate	-	%	110	-	112	-	-
Anthracene-d10 - Surrogate	-	%	104	-	104	-	-
2600 PCBs in Soil by GC							
Aroclor 1016DB	0.5	mg/kg	<0.5	-	<0.5	-	-
Aroclor 1221DB	0.5	mg/kg	<0.5	-	<0.5	-	-
Aroclor 1232 and 1242 as totalDB	1	mg/kg	<1	-	<1	-	-
Aroclor 1248 and 1254 as totalDB	1	mg/kg	<1	-	<1	-	-
Aroclor 1260DB	0.5	mg/kg	<0.5	-	<0.5	-	-
Total Polychlorinated biphenylsDB	1	mg/kg	<1	-	<1	-	-
Decachlorobiphenyl - PCB surrogate	1	%	104	-	110	-	-
2800 Individual Phenols in Soil by GC							
2,3,4,6-Tetrachlorophenol	1	mg/kg	<1	-	<1	-	-
2,3,4-Trichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-	-
2,3,5,6-Tetrachlorophenol	1	mg/kg	<1	-	<1	-	-
2,3,5-Trichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-	-
2,3,6-Trichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-	-
2,3-Dichlorophenol	1	mg/kg	<1	-	<1	-	-
2,4 & 2,5-Dichlorophenol	2	mg/kg	<2	-	<2	-	-
2,4,6-Trichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-	-
2,6-Dichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-	-
2-Chlorophenol	0.5	mg/kg	<0.5	-	<0.5	-	-
2-Methylphenol	0.5	mg/kg	<0.5	-	<0.5	-	-
3,4-Dichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-	-
3,5-Dichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-	-
3-Chlorophenol & 4-Chlorophenol	1	mg/kg	<1	-	<1	-	-
3-Methylphenol & 4-Methylphenol	1	mg/kg	<1	-	<1	-	-
4-Chloro-3-methylphenol	0.5	mg/kg	<0.5	-	<0.5	-	-
Pentachlorophenol	1	mg/kg	<1	-	<1	-	-
Phenol	0.5	mg/kg	<0.5	-	<0.5	-	-
2,4,6-Tribromophenol-Surrogate	1	%	50	-	-	-	-

Customer Sample ID			4A/T3B/0.25	4A/T3B/0.5	Q13 4A/T3B/1.0	4A/T3B/2.0	4A/RB-11
Sample Matrix			SOIL	SOIL	SOIL	SOIL	WATER
Labmark Sample No.			1405437	1405438	1405439	1405441	1405442
Date Sampled			13/02/2009	13/02/2009	13/02/2009	13/02/2009	13/02/2009
SVOC							
Test/Reference	PQL	Unit					
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	0.5	mg/kg	<0.5	-	<0.5	-	-
Butyl benzyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-	-
Dibutyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-	-
Diethyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-	-
Dimethyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-	-
Di-n-octyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-	-
Total Phthalate	3.0	mg/kg	<3.0	-	<3.0	-	-
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	10	mg/kg	<10	-	<10	-	-
C15-C28 Fraction	20	mg/kg	25	-	<20	-	-
C29-C36 Fraction	20	mg/kg	<20	-	<20	-	-
Metals							
Test/Reference	PQL	Unit					
3400 Mercury in Soil by FIMS							
Mercury	0.01	mg/kg	0.02	-	0.01	-	-
3100 Total Metals in Soil By ICP/MS							
Antimony	2	mg/kg	<2	-	<2	-	-
Arsenic	2	mg/kg	5.0	-	5.0	-	-
Barium	2	mg/kg	65	-	430	-	-
Beryllium	2	mg/kg	<2	-	<2	-	-
Boron	2	mg/kg	<2	-	3.0	-	-
Cadmium	2	mg/kg	<2	-	<2	-	-
Chromium	2	mg/kg	41	-	32	-	-
Cobalt	2	mg/kg	9.0	-	12	-	-
Copper	2	mg/kg	15	-	16	-	-
Lead	2	mg/kg	11	-	9.7	-	-
Manganese	2	mg/kg	170	-	290	-	-
Molybdenum	2	mg/kg	<2	-	<2	-	-
Nickel	2	mg/kg	25	-	28	-	-
Selenium	2	mg/kg	<2	-	<2	-	-
Tin	2	mg/kg	<2	-	<2	-	-
Vanadium	2	mg/kg	36	-	34	-	-
Zinc	2	mg/kg	33	-	58	-	-
3100 Dissolved Metals in Water By ICP/MS							
Antimony	5	µg/L	-	-	-	-	<5
Arsenic	5	µg/L	-	-	-	-	<5
Barium	5	µg/L	-	-	-	-	<5
Beryllium	5	µg/L	-	-	-	-	<5
Boron	5	µg/L	-	-	-	-	<5
Cadmium	5	µg/L	-	-	-	-	<5
Chromium	5	µg/L	-	-	-	-	<5
Cobalt	5	µg/L	-	-	-	-	<5
Copper	5	µg/L	-	-	-	-	<5
Lead	5	µg/L	-	-	-	-	<5
Manganese	5	µg/L	-	-	-	-	<5
Molybdenum	5	µg/L	-	-	-	-	<5
Nickel	5	µg/L	-	-	-	-	<5
Selenium	5	µg/L	-	-	-	-	<5
Tin	5	µg/L	-	-	-	-	<5

Customer Sample ID			4A/T3B/0.25	4A/T3B/0.5	Q13 4A/T3B/1.0	4A/T3B/2.0	4A/RB-11
Sample Matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**	**WATER**
Labmark Sample No.			**1405437**	**1405438**	**1405439**	**1405441**	**1405442**
Date Sampled			**13/02/2009**	**13/02/2009**	**13/02/2009**	**13/02/2009**	**13/02/2009**
Metals							
Test/Reference	PQL	Unit					
Vanadium	5	µg/L	-	-	-	-	<5
Zinc	5	µg/L	-	-	-	-	<5
3400 Dissolved Mercury in Water by FIMS							
Mercury	0.1	µg/L	-	-	-	-	<0.1
Inorganics							
Test/Reference	PQL	Unit					
4300 Anions in Soil by IC							
Fluoride (Soluble)	2	mg/kg	2	-	6.4	-	-
Nitrate as N (Soluble)	2	mg/kg	<2	-	<2	-	-
4270 Total Cyanide in Soil Colourmetric							
Total Cyanide	0.1	mg/kg	0.2	-	0.1	-	-
4520 Ammonia in Soil by Titration							
Ammonia as N	2	mg/kg	<2	-	<2	-	-
4000 pH in Soil							
pH	0.1	pH	7.6	7.1	8.2	9.3	-
4850 Total Phenolics in Soil by SFA							
Total Phenolics	0.1	mg/kg	<0.1	-	-	-	-
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	5	-	7	-	-
Micro							
Test/Reference	PQL	Unit					
6621 E. coli by MPN							
E. coli*	-	MPNorgs/g	<1	-	<1	-	-

Customer Sample ID			4A/TB-11	4A/QS-12
Sample Matrix			**WATER**	**SOIL**
Labmark Sample No.			**1405443**	**1405444**
Date Sampled			**13/02/2009**	**13/02/2009**
Metals				
Test/Reference	PQL	Unit		
3400 Mercury in Soil by FIMS				
Mercury	0.01	mg/kg	-	0.01
3100 Total Metals in Soil By ICP/MS				
Antimony	2	mg/kg	-	<2
Arsenic	2	mg/kg	-	5.4
Barium	2	mg/kg	-	74
Beryllium	2	mg/kg	-	<2
Boron	2	mg/kg	-	2.5
Cadmium	2	mg/kg	-	<2
Chromium	2	mg/kg	-	41
Cobalt	2	mg/kg	-	11
Copper	2	mg/kg	-	16
Lead	2	mg/kg	-	8.9
Manganese	2	mg/kg	-	200
Molybdenum	2	mg/kg	-	<2
Nickel	2	mg/kg	-	27

Customer Sample ID			**4A/TB-11**	**4A/QS-12**
Sample Matrix			**WATER**	**SOIL**
Labmark Sample No.			**1405443**	**1405444**
Date Sampled			**13/02/2009**	**13/02/2009**
Metals				
Test/Reference	PQL	Unit		
Selenium	2	mg/kg	-	<2
Tin	2	mg/kg	-	<2
Vanadium	2	mg/kg	-	40
Zinc	2	mg/kg	-	38
3100 Dissolved Metals in Water By ICP/MS				
Antimony	5	µg/L	<5	-
Arsenic	5	µg/L	<5	-
Barium	5	µg/L	<5	-
Beryllium	5	µg/L	<5	-
Boron	5	µg/L	<5	-
Cadmium	5	µg/L	<5	-
Chromium	5	µg/L	<5	-
Cobalt	5	µg/L	<5	-
Copper	5	µg/L	<5	-
Lead	5	µg/L	<5	-
Manganese	5	µg/L	<5	-
Molybdenum	5	µg/L	<5	-
Nickel	5	µg/L	<5	-
Selenium	5	µg/L	<5	-
Tin	5	µg/L	<5	-
Vanadium	5	µg/L	<5	-
Zinc	5	µg/L	<5	-
3400 Dissolved Mercury in Water by FIMS				
Mercury	0.1	µg/L	<0.1	-
Inorganics				
Test/Reference	PQL	Unit		
4000 pH in Soil				
pH	0.1	pH	-	7.1
Miscellaneous				
Test/Reference	PQL	Unit		
5000 Moisture Content				
% Moisture	1	%	-	5

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
0000 Asbestos in Soil	Melbourne 0	N/A	18/02/2009
1100 TPH (C6-C9) in Soil by P&T	Melbourne 1645	18/02/2009	20/02/2009
1300 VOCs in Soil by P&T	Melbourne 1645	17/02/2009	19/02/2009
2000 TPH (C10 - C36) in Soil by GC	Melbourne 1645	16/02/2009	19/02/2009
2100 PAH in Soil by GC	Melbourne 1645	16/02/2009	18/02/2009
2200 OC Pesticides in Soil by GC-MS	Melbourne 1645	16/02/2009	18/02/2009
2400 OP Pesticides in Soil by GC	Melbourne 1645	16/02/2009	18/02/2009
2600 PCBs in Soil by GC	Melbourne 1645	16/02/2009	19/02/2009
2800 Individual Phenols in Soil by GC	Melbourne 1645	16/02/2009	21/02/2009
2880 Phthalates in Soil by GC	Melbourne 1645	16/02/2009	19/02/2009
2920 Phenoxy Herbicides in Soil by HPLC	Melbourne 1645	16/02/2009	22/02/2009
3100 Dissolved Metals in Water By ICP/MS	Melbourne 1645	17/02/2009	18/02/2009
3100 Total Metals in Soil By ICP/MS	Melbourne 1645	18/02/2009	20/02/2009
3400 Dissolved Mercury in Water by FIMS	Melbourne 1645	25/02/2009	27/02/2009
3400 Mercury in Soil by FIMS	Melbourne 1645	24/02/2009	25/02/2009
4000 pH in Soil	Melbourne 1645	16/02/2009	19/02/2009
4270 Total Cyanide in Soil Colourmetric	Melbourne 1645	17/02/2009	18/02/2009
4300 Anions in Soil by IC	Melbourne 1645	16/02/2009	17/02/2009
4520 Ammonia in Soil by Titration	Melbourne 1645	17/02/2009	17/02/2009
4850 Total Phenolics in Soil by SFA	Melbourne 1645	17/02/2009	17/02/2009
5000 Moisture Content	Melbourne 1645	N/A	16/02/2009
6621 E. coli by MPN	Melbourne	N/A	17/02/2009

Labmark Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
9. Samples were analysed on an as received basis.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1409699 [Method Blank]							
3100 Dissolved Metals in Water By ICP/MS							
Antimony	µg/L	<5			< 5	Pass	
Arsenic	µg/L	<5			< 5	Pass	
Barium	µg/L	<5			< 5	Pass	
Beryllium	µg/L	<5			< 5	Pass	
Boron	µg/L	<5			< 5	Pass	
Cadmium	µg/L	<5			< 5	Pass	
Chromium	µg/L	<5			< 5	Pass	
Cobalt	µg/L	<5			< 5	Pass	
Copper	µg/L	<5			< 5	Pass	
Lead	µg/L	<5			< 5	Pass	
Manganese	µg/L	<5			< 5	Pass	
Molybdenum	µg/L	<5			< 5	Pass	
Nickel	µg/L	<5			< 5	Pass	
Selenium	µg/L	<5			< 5	Pass	
Tin	µg/L	<5			< 5	Pass	
Vanadium	µg/L	<5			< 5	Pass	
Zinc	µg/L	<5			< 5	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1413701 [Method Blank]							
3100 Metals in Soil - As Received							
Antimony	mg/kg	<2			< 2	Pass	
Arsenic	mg/kg	<2			< 2	Pass	
Barium	mg/kg	<2			< 2	Pass	
Beryllium	mg/kg	<2			< 2	Pass	
Boron	mg/kg	<2			< 2	Pass	
Cadmium	mg/kg	<2			< 2	Pass	
Chromium	mg/kg	<2			< 2	Pass	
Cobalt	mg/kg	<2			< 2	Pass	
Copper	mg/kg	<2			< 2	Pass	
Lead	mg/kg	<2			< 2	Pass	
Manganese	mg/kg	<2			< 2	Pass	
Molybdenum	mg/kg	<2			< 2	Pass	
Nickel	mg/kg	<2			< 2	Pass	
Selenium	mg/kg	<2			< 2	Pass	
Tin	mg/kg	<2			< 2	Pass	
Vanadium	mg/kg	<2			< 2	Pass	
Zinc	mg/kg	<2			< 2	Pass	
1422200 [Method Blank]							
3400 Mercury in Soil by FIMS							
Mercury	mg/kg	<0.01			< 0.01	Pass	
1423106 [Method Blank]							
3400 Dissolved Mercury in Water by FIMS							
Mercury	µg/L	<0.1			< 0.1	Pass	
1409700 [Laboratory Control Sample]							
3100 Dissolved Metals in Water By ICP/MS			Expected Value	Percent Recovery			
Antimony	µg/L	110	100.0	112	80-120 %	Pass	
Arsenic	µg/L	100	100.0	103	80-120 %	Pass	
Barium	µg/L	110	100.0	108	80-120 %	Pass	
Beryllium	µg/L	92	100.0	92	80-120 %	Pass	
Boron	µg/L	91	100.0	91	80-120 %	Pass	
Cadmium	µg/L	99	100.0	99	80-120 %	Pass	
Chromium	µg/L	100	100.0	100	80-120 %	Pass	
Cobalt	µg/L	98	100.0	98	80-120 %	Pass	
Copper	µg/L	100	100.0	100	80-120 %	Pass	
Lead	µg/L	110	100.0	107	80-120 %	Pass	
Manganese	µg/L	96	100.0	96	80-120 %	Pass	
Molybdenum	µg/L	100	100.0	104	80-120 %	Pass	
Nickel	µg/L	99	100.0	99	80-120 %	Pass	
Selenium	µg/L	96	100.0	96	80-120 %	Pass	
Tin	µg/L	120	100.0	115	80-120 %	Pass	
Vanadium	µg/L	98	100.0	98	80-120 %	Pass	
Zinc	µg/L	100	100.0	100	80-120 %	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1413702 [Laboratory Control Sample]							
3100 Metals in Soil - As Received			Expected Value	Percent Recovery			
Antimony	mg/kg	93	100.0	93	70-130 %	Pass	
Arsenic	mg/kg	92	100.0	92	70-130 %	Pass	
Barium	mg/kg	98	100.0	98	70-130 %	Pass	
Beryllium	mg/kg	110	100.0	113	70-130 %	Pass	
Boron	mg/kg	110	100.0	106	70-130 %	Pass	
Cadmium	mg/kg	89	100.0	89	70-130 %	Pass	
Chromium	mg/kg	100	100.0	105	70-130 %	Pass	
Cobalt	mg/kg	100	100.0	100	70-130 %	Pass	
Copper	mg/kg	90	100.0	90	70-130 %	Pass	
Lead	mg/kg	97	100.0	97	70-130 %	Pass	
Manganese	mg/kg	95	100.0	95	70-130 %	Pass	
Molybdenum	mg/kg	91	100.0	91	70-130 %	Pass	
Nickel	mg/kg	100	100.0	104	70-130 %	Pass	
Selenium	mg/kg	90	100.0	90	70-130 %	Pass	
Tin	mg/kg	95	100.0	95	70-130 %	Pass	
Vanadium	mg/kg	100	100.0	102	70-130 %	Pass	
Zinc	mg/kg	86	100.0	86	70-130 %	Pass	
1422201 [Laboratory Control Sample]							
3400 Mercury in Soil by FIMS			Expected Value	Percent Recovery			
Mercury	mg/kg	11	10.0	110	80-120 %	Pass	
1423107 [Laboratory Control Sample]							
3400 Dissolved Mercury in Water by FIMS			Expected Value	Percent Recovery			
Mercury	µg/L	8.7	10.0	87	80-120 %	Pass	
1407990 [Duplicate of 1405430]							
3400 Mercury in Soil by FIMS			Result 2	RPD			
Mercury	mg/kg	<0.01	<0.01	<1	0-30 %	Pass	
1407991 [Duplicate of 1405430]							
3100 Total Metals in Soil By ICP/MS			Result 2	RPD			
Antimony	mg/kg	<2	<2	<1	0-30 %	Pass	
Arsenic	mg/kg	6.0	5.5	9	0-30 %	Pass	
Barium	mg/kg	43	47	9	0-30 %	Pass	
Beryllium	mg/kg	<2	<2	<1	0-30 %	Pass	
Boron	mg/kg	3.0	3.2	7	0-30 %	Pass	
Cadmium	mg/kg	<2	<2	<1	0-30 %	Pass	
Chromium	mg/kg	48	46	5	0-30 %	Pass	
Cobalt	mg/kg	9.0	8.6	4	0-30 %	Pass	
Copper	mg/kg	18	17	6	0-30 %	Pass	
Lead	mg/kg	11	12	6	0-30 %	Pass	
Manganese	mg/kg	170	180	3	0-30 %	Pass	
Molybdenum	mg/kg	<2	<2	<1	0-30 %	Pass	
Nickel	mg/kg	28	26	7	0-30 %	Pass	
Selenium	mg/kg	<2	<2	<1	0-30 %	Pass	
Tin	mg/kg	<2	<2	<1	0-30 %	Pass	
Vanadium	mg/kg	47	46	2	0-30 %	Pass	
Zinc	mg/kg	40	38	5	0-30 %	Pass	
1407995 [Spike of 1405432]							
3400 Mercury in Soil by FIMS			Spike Value	Percent Recovery			
Mercury	mg/kg	11	10.0	113	80-120 %	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1407996 [Spike of 1405432]							
3100 Total Metals in Soil By ICP/MS			Spike Value	Percent Recovery			
Arsenic	mg/kg	90	100.0	85	70-130 %	Pass	
Barium	mg/kg	150	100.0	101	70-130 %	Pass	
Beryllium	mg/kg	120	100.0	116	70-130 %	Pass	
Boron	mg/kg	110	100.0	103	70-130 %	Pass	
Cadmium	mg/kg	82	100.0	82	70-130 %	Pass	
Chromium	mg/kg	130	100.0	106	70-130 %	Pass	
Cobalt	mg/kg	110	100.0	102	70-130 %	Pass	
Copper	mg/kg	110	100.0	95	70-130 %	Pass	
Lead	mg/kg	100	100.0	91	70-130 %	Pass	
Molybdenum	mg/kg	78	100.0	77	70-130 %	Pass	
Nickel	mg/kg	120	100.0	93	70-130 %	Pass	
Tin	mg/kg	96	100.0	96	70-130 %	Pass	
Vanadium	mg/kg	140	100.0	107	70-130 %	Pass	
Zinc	mg/kg	130	100.0	95	70-130 %	Pass	

Laboratory: **EN_PREP**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1407989 [Duplicate of 1405430]							
5000 Moisture Content			Result 2	RPD			
% Moisture	%	5	5	N/A	N/A	N/A	
1407992 [Duplicate of 1405430]							
5000 Moisture Content			Result 2	RPD			
% Moisture	%	5	5	N/A	N/A	N/A	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1405988 [Method Blank]							
2920 Phenoxy Herbicides in Soil by HPLC							
2,4,5-Trichlorophenoxy-acetic acid	mg/kg	<0.5			< 0.5	Pass	
2,4,5-Trichlorophenoxy-propanoic ac	mg/kg	<0.5			< 0.5	Pass	
2,4,6-Trichlorophenoxy-acetic acid	mg/kg	<0.5			< 0.5	Pass	
2,4-Dichlorophenoxy propanoic acid	mg/kg	<0.5			< 0.5	Pass	
2,4-Dichlorophenoxy-acetic acid (24	mg/kg	<0.5			< 0.5	Pass	
2,4-Dichlorophenoxy-butanoic acid (	mg/kg	<0.5			< 0.5	Pass	
2-Chlorophenoxy acetic acid (2-CP	mg/kg	<0.5			< 0.5	Pass	
2-Methyl-4-chlorophenoxy butanoic a	mg/kg	<0.5			< 0.5	Pass	
2-Methyl-4-chlorophenoxy-acetic ac	mg/kg	<0.5			< 0.5	Pass	
4-Chlorophenoxy acetic acid	mg/kg	<0.5			< 0.5	Pass	
Dicamba	mg/kg	<0.5			< 0.5	Pass	
1408301 [Method Blank]							
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	mg/kg	<10			< 10	Pass	
C15-C28 Fraction	mg/kg	<20			< 20	Pass	
C29-C36 Fraction	mg/kg	<20			< 20	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1408303 [Method Blank]							Q13
2100 PAH in Soil by GC							
Acenaphthene	mg/kg	<0.5			< 0.5	Pass	
Acenaphthylene	mg/kg	<0.5			< 0.5	Pass	
Anthracene	mg/kg	<0.5			< 0.5	Pass	
Benz(a)anthracene	mg/kg	<0.5			< 0.5	Pass	
Benzo(a)pyrene	mg/kg	<0.5			< 0.5	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	<1			< 1	Pass	
Benzo(g.h.i)perylene	mg/kg	<0.5			< 0.5	Pass	
Chrysene	mg/kg	<0.5			< 0.5	Pass	
Dibenz(ah)anthracene	mg/kg	<0.5			< 0.5	Pass	
Fluoranthene	mg/kg	<0.5			< 0.5	Pass	
Fluorene	mg/kg	<0.5			< 0.5	Pass	
Indeno(123-cd)pyrene	mg/kg	<0.5			< 0.5	Pass	
Naphthalene	mg/kg	<0.5			< 0.5	Pass	
Phenanthrene	mg/kg	<0.5			< 0.5	Pass	
Pyrene	mg/kg	<0.5			< 0.5	Pass	
Sum of PAHs	mg/kg	<0.5			< 0.5	Pass	
2-Fluorobiphenyl - Surrogate	%	99			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	100			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	104			70-130 %	Pass	
2200 OC Pesticides in Soil by GC-MS							
a-BHC	mg/kg	<0.5			< 0.5	Pass	
a-Chlordane	mg/kg	<0.5			< 0.5	Pass	
a-Endosulfan	mg/kg	<0.5			< 0.5	Pass	
Aldrin	mg/kg	<0.5			< 0.5	Pass	
b-BHC	mg/kg	<0.5			< 0.5	Pass	
b-Endosulfan	mg/kg	<0.5			< 0.5	Pass	
d-BHC	mg/kg	<0.5			< 0.5	Pass	
DDD	mg/kg	<0.5			< 0.5	Pass	
DDE	mg/kg	<0.5			< 0.5	Pass	
DDT	mg/kg	<0.5			< 0.5	Pass	
Dieldrin	mg/kg	<0.5			< 0.5	Pass	
Endosulfan sulfate	mg/kg	<0.5			< 0.5	Pass	
Endrin	mg/kg	<0.5			< 0.5	Pass	
Endrin Aldehyde	mg/kg	<0.5			< 0.5	Pass	
g-BHC	mg/kg	<0.5			< 0.5	Pass	
g-Chlordane	mg/kg	<0.5			< 0.5	Pass	
Heptachlor	mg/kg	<0.5			< 0.5	Pass	
Heptachlor epoxide	mg/kg	<0.5			< 0.5	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5			< 0.5	Pass	
Methoxychlor	mg/kg	<0.5			< 0.5	Pass	
Oxychlordane	mg/kg	<0.5			< 0.5	Pass	
2.4.5.6-tetrachloro-m-xylene-SURROGATE	%	105			70-130 %	Pass	
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	mg/kg	<0.5			< 0.5	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5			< 0.5	Pass	
Diazinon	mg/kg	<0.5			< 0.5	Pass	
Ethion	mg/kg	<0.5			< 0.5	Pass	
Fenitrothion	mg/kg	<0.5			< 0.5	Pass	
Fenthion	mg/kg	<0.5			< 0.5	Pass	
Malathion	mg/kg	<0.5			< 0.5	Pass	
Methyl Parathion	mg/kg	<0.5			< 0.5	Pass	
Parathion	mg/kg	<0.5			< 0.5	Pass	
Ronnel	mg/kg	<0.5			< 0.5	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	104			70-130 %	Pass	
2600 PCBs in Soil by GC							
Aroclor 1016	mg/kg	<0.5			< 0.5	Pass	
Aroclor 1221	mg/kg	<0.5			< 0.5	Pass	
Aroclor 1232 and 1242 as total	mg/kg	<1			< 1	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1408303 [Method Blank]							Q13
2600 PCBs in Soil by GC							
Aroclor 1248 and 1254 as total	mg/kg	<1			< 1	Pass	
Aroclor 1260	mg/kg	<0.5			< 0.5	Pass	
Total Polychlorinated biphenyls	mg/kg	<1			< 1	Pass	
Decachlorobiphenyl - PCB surrogate	%	105			70-130 %	Pass	
2800 Individual Phenols in Soil by GC							
2,3,4,6-Tetrachlorophenol	mg/kg	<1			< 1	Pass	
2,3,4-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	<1			< 1	Pass	
2,3,5-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3,6-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3-Dichlorophenol	mg/kg	<1			< 1	Pass	
2,4&2,5-Dichlorophenol	mg/kg	<2			< 2	Pass	
2,4,6-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,6-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2-Chlorophenol	mg/kg	<0.5			< 0.5	Pass	
2-Methylphenol	mg/kg	<0.5			< 0.5	Pass	
3,4-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
3,5-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	<1			< 1	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	<1			< 1	Pass	
4-Chloro-3-methylphenol	mg/kg	<0.5			< 0.5	Pass	
Pentachlorophenol	mg/kg	<1			< 1	Pass	
Phenol	mg/kg	<0.5			< 0.5	Pass	
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	mg/kg	<0.5			< 0.5	Pass	
Butyl benzyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Dibutyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Diethyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Dimethyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Di-n-octyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Total Phthalate	mg/kg	<3.0			< 3.0	Pass	
1405990 [Laboratory Control Sample]							Q13
2920 Phenoxy Herbicides in Soil by HPLC			Expected Value	Percent Recovery			
2,4,5-Trichlorophenoxy-acetic acid	mg/kg	1.1	1.0	110	70-130 %	Pass	
2,4,5-Trichlorophenoxy-propanoic ac	mg/kg	1.3	1.0	126	70-130 %	Pass	
2,4,6-Trichlorophenoxy-acetic acid	mg/kg	1.4	N/A	N/A	N/A	N/A	
2,4-Dichlorophenoxy propanoic acid	mg/kg	1.1	1.0	114	70-130 %	Pass	
2,4-Dichlorophenoxy-acetic acid (24	mg/kg	1.2	1.0	118	70-130 %	Pass	
2,4-Dichlorophenoxy-butanoic acid (	mg/kg	1.2	1.0	118	70-130 %	Pass	
2-Chlorophenoxy acetic acid (2-CP	mg/kg	1.1	1.0	110	70-130 %	Pass	
2-Methyl-4-chlorophenoxy butanoic a	mg/kg	1.1	1.0	106	70-130 %	Pass	
2-Methyl-4-chlorophenoxy-acetic ac	mg/kg	1.1	1.0	114	70-130 %	Pass	
4-Chlorophenoxy acetic acid	mg/kg	1.1	1.0	110	70-130 %	Pass	
Dicamba	mg/kg	1.1	1.0	108	70-130 %	Pass	
1408302 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	120	125.0	100	70-130 %	Pass	
C15-C28 Fraction	mg/kg	120	125.0	97	70-130 %	Pass	
C29-C36 Fraction	mg/kg	120	125.0	94	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1408304 [Laboratory Control Sample]							Q13
2100 PAH in Soil by GC			Expected Value	Percent Recovery			
Acenaphthene	mg/kg	2.4	2.0	120	70-130 %	Pass	
Acenaphthylene	mg/kg	2.4	2.0	119	70-130 %	Pass	
Anthracene	mg/kg	2.6	2.0	128	70-130 %	Pass	
Benz(a)anthracene	mg/kg	2.4	2.0	120	70-130 %	Pass	
Benzo(a)pyrene	mg/kg	2.5	2.0	125	70-130 %	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	4.9	4.0	123	70-130 %	Pass	
Benzo(g.h.i)perylene	mg/kg	2.2	2.0	112	70-130 %	Pass	
Chrysene	mg/kg	2.4	2.0	121	70-130 %	Pass	
Dibenz(ah)anthracene	mg/kg	2.2	2.0	111	70-130 %	Pass	
Fluoranthene	mg/kg	2.3	2.0	116	70-130 %	Pass	
Fluorene	mg/kg	2.4	2.0	122	70-130 %	Pass	
Indeno(123-cd)pyrene	mg/kg	2.3	2.0	115	70-130 %	Pass	
Naphthalene	mg/kg	2.4	2.0	118	70-130 %	Pass	
Phenanthrene	mg/kg	2.5	2.0	126	70-130 %	Pass	
Pyrene	mg/kg	2.3	2.0	114	70-130 %	Pass	
Sum of PAHs	mg/kg	38	32.0	120	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	108			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	110			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	106			70-130 %	Pass	
2200 OC Pesticides in Soil by GC-MS			Expected Value	Percent Recovery			
a-BHC	mg/kg	2.2	2.0	109	70-130 %	Pass	
a-Chlordane	mg/kg	2.4	2.0	119	70-130 %	Pass	
a-Endosulfan	mg/kg	1.9	2.0	96	70-130 %	Pass	
Aldrin	mg/kg	2.2	2.0	111	70-130 %	Pass	
b-BHC	mg/kg	2.2	2.0	112	70-130 %	Pass	
b-Endosulfan	mg/kg	2.2	2.0	108	70-130 %	Pass	
d-BHC	mg/kg	2.3	2.0	116	70-130 %	Pass	
DDD	mg/kg	2.1	2.0	105	70-130 %	Pass	
DDE	mg/kg	2.2	2.0	111	70-130 %	Pass	
DDT	mg/kg	2.2	2.0	112	70-130 %	Pass	
Dieldrin	mg/kg	2.0	2.0	101	70-130 %	Pass	
Endosulfan sulfate	mg/kg	2.3	2.0	114	70-130 %	Pass	
Endrin	mg/kg	2.2	2.0	110	70-130 %	Pass	
Endrin Aldehyde	mg/kg	2.4	2.0	121	70-130 %	Pass	
g-BHC	mg/kg	2.2	2.0	111	70-130 %	Pass	
g-Chlordane	mg/kg	2.4	2.0	118	70-130 %	Pass	
Heptachlor	mg/kg	2.3	2.0	115	70-130 %	Pass	
Heptachlor epoxide	mg/kg	2.0	2.0	100	70-130 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	2.2	2.0	109	70-130 %	Pass	
Methoxychlor	mg/kg	2.4	2.0	119	70-130 %	Pass	
Oxychlordane	mg/kg	<0.5	N/A	N/A	N/A	N/A	
2400 OP Pesticides in Soil by GC			Expected Value	Percent Recovery			
Chlorpyrifos	mg/kg	2.5	2.0	124	70-130 %	Pass	
Chlorpyrifos Methyl	mg/kg	2.4	2.0	122	70-130 %	Pass	
Diazinon	mg/kg	2.7	N/A	N/A	N/A	N/A	
Ethion	mg/kg	2.1	2.0	105	70-130 %	Pass	
Fenitrothion	mg/kg	2.5	2.0	124	70-130 %	Pass	
Fenthion	mg/kg	2.8	N/A	N/A	N/A	N/A	
Malathion	mg/kg	2.3	2.0	114	70-130 %	Pass	
Methyl Parathion	mg/kg	2.3	2.0	114	70-130 %	Pass	
Parathion	mg/kg	2.3	2.0	116	70-130 %	Pass	
Ronnel	mg/kg	2.5	2.0	125	70-130 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	110			70-130 %	Pass	
2600 PCBs in Soil by GC			Expected Value	Percent Recovery			
Aroclor 1016	mg/kg	2.5	2.0	123	70-130 %	Pass	
Aroclor 1221	mg/kg	<0.5	N/A	N/A	N/A	N/A	
Aroclor 1232 and 1242 as total	mg/kg	<1	N/A	N/A	N/A	N/A	
Aroclor 1248 and 1254 as total	mg/kg	2.5	2.0	127	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1408304 [Laboratory Control Sample]							Q13
2600 PCBs in Soil by GC			Expected Value	Percent Recovery			
Aroclor 1260	mg/kg	2.4	2.0	120	70-130 %	Pass	
Total Polychlorinated biphenyls	mg/kg	7.4	N/A	N/A	N/A	N/A	
Decachlorobiphenyl - PCB surrogate	%	110			70-130 %	Pass	
1408305 [Laboratory Control Sample]							
2800 Individual Phenols in Soil by GC			Expected Value	Percent Recovery			
2,3,4,6-Tetrachlorophenol	mg/kg	4.0	4.0	99	50-130 %	Pass	
2,3,4-Trichlorophenol	mg/kg	3.3	4.0	83	50-130 %	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	4.7	4.0	118	50-130 %	Pass	
2,3,5-Trichlorophenol	mg/kg	3.2	4.0	79	50-130 %	Pass	
2,3,6-Trichlorophenol	mg/kg	3.4	4.0	84	50-130 %	Pass	
2,3-Dichlorophenol	mg/kg	3.1	4.0	78	50-130 %	Pass	
2,4&2,5-Dichlorophenol	mg/kg	6.8	8.0	85	50-130 %	Pass	
2,4,6-Trichlorophenol	mg/kg	3.4	4.0	85	50-130 %	Pass	
2,6-Dichlorophenol	mg/kg	3.2	4.0	81	50-130 %	Pass	
2-Chlorophenol	mg/kg	3.1	4.0	78	50-130 %	Pass	
2-Methylphenol	mg/kg	3.2	4.0	80	50-130 %	Pass	
3,4-Dichlorophenol	mg/kg	3.3	4.0	82	50-130 %	Pass	
3,5-Dichlorophenol	mg/kg	3.4	4.0	84	50-130 %	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	6.1	8.0	76	50-130 %	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	6.6	8.0	82	50-130 %	Pass	
4-Chloro-3-methylphenol	mg/kg	3.3	4.0	82	50-130 %	Pass	
Pentachlorophenol	mg/kg	7.8	8.0	98	50-130 %	Pass	
Phenol	mg/kg	3.2	4.0	81	50-130 %	Pass	
2,4,6-Tribromophenol-Surrogate	%	80			50-130 %	Pass	
1408306 [Laboratory Control Sample]							
2880 Phthalates in Soil by GC			Expected Value	Percent Recovery			
bis (2-ethylhexyl) phthalate	mg/kg	2.0	2.0	100	70-130 %	Pass	
Butyl benzyl phthalate	mg/kg	2.0	2.0	98	70-130 %	Pass	
Dibutyl phthalate	mg/kg	1.9	2.0	94	70-130 %	Pass	
Diethyl phthalate	mg/kg	2.0	2.0	100	70-130 %	Pass	
Dimethyl phthalate	mg/kg	2.1	2.0	106	70-130 %	Pass	
Di-n-octyl phthalate	mg/kg	2.0	2.0	99	70-130 %	Pass	
Total Phthalate	mg/kg	12	12.0	99	70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1409792 [Method Blank]							
1300 VOCs in Soil by P&T							
1,1,1,2-Tetrachloroethane	mg/kg	<1.0			< 1	Pass	
1,1,1-Trichloroethane	mg/kg	<1.0			< 1	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	<1.0			< 1	Pass	
1,1,2-Trichloroethane	mg/kg	<1.0			< 1	Pass	
1,1-Dichloroethane	mg/kg	<1.0			< 1	Pass	
1,1-Dichloroethene	mg/kg	<1.0			< 1	Pass	
1,1-Dichloropropylene	mg/kg	<1.0			< 1	Pass	
1,2,3-Trichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2,3-Trichloropropane	mg/kg	<1.0			< 1	Pass	
1,2,4-Trichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2,4-Trimethylbenzene	mg/kg	<1.0			< 1	Pass	
1,2-Dibromo-3-chloropropane	mg/kg	<1.0			< 1	Pass	
1,2-Dibromoethane	mg/kg	<1.0			< 1	Pass	
1,2-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2-Dichloroethane	mg/kg	<1.0			< 1	Pass	
1,2-Dichloropropane	mg/kg	<1.0			< 1	Pass	
1,3,5-Trimethylbenzene	mg/kg	<1.0			< 1	Pass	
1,3-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,3-Dichloropropane	mg/kg	<1.0			< 1	Pass	
1,4-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
2,2-Dichloropropane	mg/kg	<10.0			< 10	Pass	
2-butanone	mg/kg	<10.0			< 10	Pass	
2-Chlorotoluene	mg/kg	<1.0			< 1	Pass	
4-Chlorotoluene	mg/kg	<1.0			< 1	Pass	
4-methyl-2-pentanone	mg/kg	<10.0			< 10	Pass	
Benzene	mg/kg	<0.2			< 0.2	Pass	
Bromobenzene	mg/kg	<1.0			< 1	Pass	
Bromochloromethane	mg/kg	<1.0			< 1	Pass	
Bromodichloromethane	mg/kg	<1.0			< 1	Pass	
Bromoform	mg/kg	<1.0			< 1	Pass	
Bromomethane	mg/kg	<1.0			< 1	Pass	
Carbon Tetrachloride	mg/kg	<1.0			< 1	Pass	
Chlorobenzene	mg/kg	<1.0			< 1	Pass	
Chloroethane	mg/kg	<1.0			< 1	Pass	
Chloroform	mg/kg	<1.0			< 1	Pass	
Chloromethane	mg/kg	<1.0			< 1	Pass	
cis-1,2-Dichloroethene	mg/kg	<1.0			< 1	Pass	
cis-1,3-Dichloropropene	mg/kg	<1.0			< 1	Pass	
Dibromochloromethane	mg/kg	<1.0			< 1	Pass	
Dibromomethane	mg/kg	<1.0			< 1	Pass	
Dichlorodifluoromethane	mg/kg	<1.0			< 1	Pass	
Ethylbenzene	mg/kg	<1.0			< 1	Pass	
Hexachlorobutadiene	mg/kg	<1.0			< 1	Pass	
Hexachloroethane	mg/kg	<1.0			< 1	Pass	
Isopropylbenzene	mg/kg	<0.5			< 0.5	Pass	
Meta- & Para- Xylene	mg/kg	<2.0			< 2	Pass	
Methylene Chloride	mg/kg	<5.0			< 5	Pass	
Naphthalene	mg/kg	<1.0			< 1	Pass	
n-Butylbenzene	mg/kg	<1.0			< 1	Pass	
n-Propylbenzene	mg/kg	<1.0			< 1	Pass	
Ortho-Xylene	mg/kg	<1.0			< 1	Pass	
Pentachloroethane	mg/kg	<1.0			< 1	Pass	
p-Isopropyltoluene	mg/kg	<1.0			< 1	Pass	
sec-Butylbenzene	mg/kg	<1.0			< 1	Pass	
Styrene	mg/kg	<0.5			< 0.5	Pass	
tert-Butylbenzene	mg/kg	<1.0			< 1	Pass	
Tetrachloroethene	mg/kg	<1.0			< 1	Pass	
Toluene	mg/kg	<1.0			< 1	Pass	
Total Xylenes	mg/kg	<3.0			< 3	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1409792 [Method Blank]							
1300 VOCs in Soil by P&T							
trans-1,2-Dichloroethene	mg/kg	<1.0			< 1	Pass	
trans-1,3-Dichloropropene	mg/kg	<1.0			< 1	Pass	
Trichloroethene	mg/kg	<1.0			< 1	Pass	
Trichlorofluoromethane	mg/kg	<1.0			< 1	Pass	
Vinyl Chloride	mg/kg	<1.0			< 1	Pass	
1411307 [Method Blank]							
1100 BTEX in Soil by P&T							
Benzene	mg/kg	<0.2			< 0.2	Pass	
C6-C9 Fraction	mg/kg	<5.0			< 5	Pass	
Ethylbenzene	mg/kg	<1.0			< 1	Pass	
Meta- & Para- Xylene	mg/kg	<2.0			< 2	Pass	
Ortho-Xylene	mg/kg	<1.0			< 1	Pass	
Toluene	mg/kg	<1.0			< 1	Pass	
Total Xylenes	mg/kg	<3.0			< 3	Pass	
4-Bromofluorobenzene - Surrogate	%	94			70-130 %	Pass	
1409794 [Laboratory Control Sample]							
1300 VOCs in Soil by P&T			Expected Value	Percent Recovery			
1,1,1-Trichloroethane	mg/kg	10	10.0	103	70-130 %	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	7.9	10.0	79	70-130 %	Pass	
1,1,2-Trichloroethane	mg/kg	9.6	10.0	96	70-130 %	Pass	
1,1-Dichloroethane	mg/kg	9.8	10.0	98	70-130 %	Pass	
1,1-Dichloroethene	mg/kg	9.2	10.0	92	70-130 %	Pass	
1,2-Dichlorobenzene	mg/kg	9.9	10.0	99	70-130 %	Pass	
1,2-Dichloroethane	mg/kg	9.2	10.0	92	70-130 %	Pass	
1,2-Dichloropropane	mg/kg	9.9	10.0	99	70-130 %	Pass	
1,3-Dichlorobenzene	mg/kg	10	10.0	105	70-130 %	Pass	
1,4-Dichlorobenzene	mg/kg	11	10.0	107	70-130 %	Pass	
Benzene	mg/kg	10	10.0	103	70-130 %	Pass	
Bromodichloromethane	mg/kg	9.1	10.0	91	70-130 %	Pass	
Bromoform	mg/kg	8.2	10.0	82	70-130 %	Pass	
Carbon Tetrachloride	mg/kg	10	10.0	101	70-130 %	Pass	
Chlorobenzene	mg/kg	11	10.0	107	70-130 %	Pass	
Chloroform	mg/kg	10	10.0	101	70-130 %	Pass	
cis-1,3-Dichloropropene	mg/kg	9.9	10.0	99	70-130 %	Pass	
Dibromochloromethane	mg/kg	8.9	10.0	89	70-130 %	Pass	
Ethylbenzene	mg/kg	11	10.0	111	70-130 %	Pass	
Methylene Chloride	mg/kg	8.6	10.0	86	70-130 %	Pass	
Tetrachloroethene	mg/kg	11	10.0	109	70-130 %	Pass	
Toluene	mg/kg	12	10.0	116	70-130 %	Pass	
trans-1,2-Dichloroethene	mg/kg	9.1	10.0	91	70-130 %	Pass	
trans-1,3-Dichloropropene	mg/kg	9.4	10.0	94	70-130 %	Pass	
Trichloroethene	mg/kg	10	10.0	104	70-130 %	Pass	
1411308 [Laboratory Control Sample]							
1100 BTEX in Soil by P&T			Expected Value	Percent Recovery			
Benzene	mg/kg	4.0	5.0	81	70-130 %	Pass	
C6-C9 Fraction	mg/kg	56	50.0	110	70-130 %	Pass	
Ethylbenzene	mg/kg	4.1	5.0	82	70-130 %	Pass	
Meta- & Para- Xylene	mg/kg	8.2	10.0	82	70-130 %	Pass	
Ortho-Xylene	mg/kg	3.9	5.0	78	70-130 %	Pass	
Toluene	mg/kg	4.2	5.0	83	70-130 %	Pass	
Total Xylenes	mg/kg	12	15.0	80	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	92			70-130 %	Pass	

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1407028 [Method Blank]							
4300 Anions in Soil by IC							
Bromide (Soluble)	mg/kg	<2			< 2	Pass	
Chloride (Soluble)	mg/kg	<2			< 2	Pass	
Fluoride (Soluble)	mg/kg	<2			< 2	Pass	
Nitrate (Soluble)	mg/kg	<2			< 2	Pass	
Nitrite (Soluble)	mg/kg	<2			< 2	Pass	
Orthophosphorus (Soluble)	mg/kg	<2			< 2	Pass	
Sulphate (Soluble)	mg/kg	<2			< 2	Pass	
1409068 [Method Blank]							
4270 Total Cyanide in Soil Colourmetric							
Total Cyanide	mg/kg	<0.1			< 0.1	Pass	
1409355 [Method Blank]							
4300 Anions in Soil by IC							
Bromide (Soluble)	mg/kg	<2			< 2	Pass	
Chloride (Soluble)	mg/kg	<2			< 2	Pass	
Fluoride (Soluble)	mg/kg	<2			< 2	Pass	
Nitrate (Soluble)	mg/kg	<2			< 2	Pass	
Nitrite (Soluble)	mg/kg	<2			< 2	Pass	
Orthophosphorus (Soluble)	mg/kg	<2			< 2	Pass	
Sulphate (Soluble)	mg/kg	<2			< 2	Pass	
1409528 [Method Blank]							
4850 Total Phenolics in Soil by SFA							
Total Phenolics	mg/kg	<0.1			< 0.1	Pass	
1407030 [Laboratory Control Sample]							
4300 Anions in Soil by IC			Expected Value	Percent Recovery			
Bromide (Soluble)	mg/kg	520	500.0	104	75-125 %	Pass	
Chloride (Soluble)	mg/kg	530	500.0	106	75-125 %	Pass	
Fluoride (Soluble)	mg/kg	530	500.0	105	75-125 %	Pass	
Nitrate (Soluble)	mg/kg	590	500.0	117	75-125 %	Pass	
Nitrite (Soluble)	mg/kg	480	500.0	95	75-125 %	Pass	
Orthophosphorus (Soluble)	mg/kg	540	500.0	108	75-125 %	Pass	
Sulphate (Soluble)	mg/kg	550	500.0	111	75-125 %	Pass	
1407256 [Laboratory Control Sample]							
4000 pH in Soil			Expected Value	Percent Recovery			
pH	pH	7.4	N/A	N/A	N/A	N/A	
1407257 [Laboratory Control Sample]							
4000 pH in Soil			Expected Value	Percent Recovery			
pH	pH	7.4	N/A	N/A	N/A	N/A	
1408924 [Laboratory Control Sample]							
4520 Ammonia in Soil by Titration			Expected Value	Percent Recovery			
Ammonia as N	mg/kg	110	100.0	105	70-130 %	Pass	
1409071 [Laboratory Control Sample]							
4270 Total Cyanide in Soil Colourmetric			Expected Value	Percent Recovery			
Total Cyanide	mg/kg	0.5	0.5	98	70-130 %	Pass	
1409266 [Laboratory Control Sample]							
4000 pH in Soil			Expected Value	Percent Recovery			
pH	pH	7.4	N/A	N/A	N/A	N/A	
1409357 [Laboratory Control Sample]							
4300 Anions in Soil by IC			Expected Value	Percent Recovery			
Bromide (Soluble)	mg/kg	480	500.0	95	75-125 %	Pass	
Chloride (Soluble)	mg/kg	490	500.0	98	75-125 %	Pass	
Fluoride (Soluble)	mg/kg	480	500.0	95	75-125 %	Pass	
Nitrate (Soluble)	mg/kg	570	500.0	115	75-125 %	Pass	
Nitrite (Soluble)	mg/kg	440	500.0	88	75-125 %	Pass	
Orthophosphorus (Soluble)	mg/kg	490	500.0	99	75-125 %	Pass	
Sulphate (Soluble)	mg/kg	510	500.0	101	75-125 %	Pass	

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1409530 [Laboratory Control Sample]							
4850 Total Phenolics in Soil by SFA			Expected Value	Percent Recovery			
Total Phenolics	mg/kg	0.4	0.5	86	70-130 %	Pass	
1407989 [Duplicate of 1405430]							
4300 Anions in Soil by IC			Result 2	RPD			
Fluoride (Soluble)	mg/kg	<2	<2	<1	0-20 %	Pass	
Nitrate as N (Soluble)	mg/kg	<2	<2	<1	0-20 %	Pass	
1407992 [Duplicate of 1405430]							
4520 Ammonia in Soil by Titration			Result 2	RPD			
Ammonia as N	mg/kg	<2	<2	<1	0-25 %	Pass	
1407993 [Duplicate of 1405430]							
4000 pH in Soil			Result 2	RPD			
pH	pH	6.4	6.4	0.0	0-0.5 pH	Pass	
1407994 [Spike of 1405432]							
4300 Anions in Soil by IC			Spike Value	Percent Recovery			
Fluoride (Soluble)	mg/kg	430	500.0	84	75-125 %	Pass	
Nitrate (Soluble)	mg/kg	580	500.0	115	75-125 %	Pass	
1407997 [Spike of 1405432]							
4520 Ammonia in Soil by Titration			Spike Value	Percent Recovery			
Ammonia as N	mg N/kg	97	100.0	97	70-130 %	Pass	
dilution factor	-	1	N/A	N/A	N/A	N/A	

Report Results Information

Asbestos in Soil	Amdel Mineral Chemistry, Accreditation: 1526, report number 9AA0113I.

Sample Integrity

Custody Seals Intact (if used)	Yes
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
Q13	Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. For any failed elements; positive results in blind samples can only be used as a guide. All other QC has passed in this test batch.

Authorised By

Alex Petridis	Senior Analyst - SVOC	
Carol Cawrse	Client Services Officer	
Elizabeth Davison	Client Services Officer	
Niloufer Lobo	Analyst - Microbiology	
Barry Blythman	Senior Analyst - VOC	Accreditation Number: 1645
Mark Herbstreit	Senior Analyst - Metals	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Olga Alieva	Analyst - SVOC	Accreditation Number: 1645
Patricia Hua	Senior Analyst	Accreditation Number: 1645

Laboratory Manager

David Elliott Laboratory Manager - Melbourne

Final Report

- Indicates Not Requested * Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Laboratory staff.

Sample Receipt Advice

LabMark
ENVIRONMENTAL LABORATORIES

Customer Service - 1300 552 389

Client Name:	OTEK AUSTRALIA PTY LTD	**Date Received:**	13 February 2009
Attention:	Tom Santwyk-Anderson	**Due Date:**	20 February 2009
Client Reference number:	3106004 Werribee Area 4	**Turnaround:**	Standard

Laboratory Reference Number:	09ENME0005084	**Your Laboratory Contact:**	Ruth Callander +61 3 9538 2277

If you have any queries regarding turnaround and sample progress, technical queries or wish to make changes please contact the laboratory immediately.

Job Information

Sample Integrity	
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes
Custody Seals Intact (if used)	Yes

Analysis Requested

Analysis Requested	Method Code	Number Of Samples
Anions in Soil by IC	4300	6
Asbestos in Soil	0000	3
TPH (C6-C9) in Soil by P&T	1100	1
Total Cyanide in Soil Colourmetric	4270	2
E. coli by MPN	6621	6
Phenoxy Herbicides in Soil by HPLC	2920	3
Mercury in Soil by FIMS	3400	7
Dissolved Mercury in Water by FIMS	3400	2
Total Metals in Soil By ICP/MS	3100	7
Dissolved Metals in Water By ICP/MS	3100	2
Moisture Content	5000	8
Ammonia in Soil by Titration	4520	6
OC Pesticides in Soil by GC-MS	2200	3
OP Pesticides in Soil by GC	2400	3
PAH in Soil by GC	2100	3
PCBs in Soil by GC	2600	3
pH in Soil	4000	10
Individual Phenols in Soil by GC	2800	3
Phthalates in Soil by GC	2880	3
Total Phenolics in Soil by SFA	4850	1
TPH (C10 - C36) in Soil by GC	2000	2
VOCs in Soil by P&T	1300	1

Note

- Turn Around Time starts when samples are received at the Laboratory
- For samples received after 4pm, Turn Around Time starts the next working day
- For samples received on the last day of holding time, notification of testing requirements must be given at least 6 hours prior to the sample receipt deadlines; Should the laboratory not receive the information in the required timeframe a suitably qualified results may still be reported.
- Surcharges may apply for 24, 48 and 72 hour turnaround.
- Water samples will be discarded after 4 weeks unless notified.
- Soil samples are chilled for 1 month and will be discarded after 3 months unless notified.
- Samples submitted for Micro analysis on a Friday may incur a $150 surcharge and / or be analysed outside holding time (24 Hour Holding Time).
- The Quoted Due Date does not apply to sub-contracted tests or some in-house tests. Contact your Customer Support Officer for details
  NOTE: Unless advised otherwise - Sample analysis will commence regardless of integrity issues and / or non-conformance and these will be recorded on the final report.

Logged in by : Michael Cassidy

Date : Fri 13 February 2009

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) LUKE DALLAGO
SIGNATURE
DATE 30-4-09

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0901295**	Page	: 1 of 3
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - Werribee Area 4 Asbestos Pipe Removal	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 39467		
C-O-C number	: —	Date Samples Received	: 13-FEB-2009
Sampler	: CB, KB	Issue Date	: 20-FEB-2009
Site	: —		
		No. of samples received	: 1
Quote number	: —	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: 4A/QS-12A	----	----	----	----
				Client sampling date / time: 13-FEB-2009 15:00	----	----	----	----
				EM0901295-001	----	----	----	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**7.1**	----	----	----	----
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**3.5**	----	----	----	----
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
Arsenic	7440-38-2	5	mg/kg	**6**	----	----	----	----
Barium	7440-39-3	10	mg/kg	**60**	----	----	----	----
Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**38**	----	----	----	----
Cobalt	7440-48-4	2	mg/kg	**14**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**17**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**10**	----	----	----	----
Manganese	7439-96-5	5	mg/kg	**187**	----	----	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**29**	----	----	----	----
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg	**39**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**35**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----

QUALITY CONTROL REPORT

Work Order	: **EM0901295**	Page	: 1 of 6
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - Werribee Area 4 Asbestos Pipe Removal	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 13-FEB-2009
Sampler	: CB, KB	Issue Date	: 20-FEB-2009
Order number	: 39467		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Nikki Stepniewski	Non-metallic Supervisor	Inorganics
Snezana Vanovac	Laboratory Technician	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 892317)									
EM0901292-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	8.1	8.1	0.0	0% - 20%
EM0901294-004	Anonymous	EA002: pH Value	----	0.1	pH Unit	9.2	9.2	0.0	0% - 20%
EA055: Moisture Content (QC Lot: 892420)									
EM0901293-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	2.4	2.0	19.4	No Limit
EM0901294-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	12.1	12.5	3.3	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 892974)									
EM0901291-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	170	180	6.3	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	21	26	18.4	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	11	13	12.2	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	37	42	13.3	0% - 20%
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	33	40	18.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	52	60	15.3	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	313	313	0.0	0% - 20%
		EG005T: Manganese	7439-96-5	5	mg/kg	234	279	17.4	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	9	10	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	29	29	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	241	271	11.8	0% - 20%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EP0900767-006	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	<10	<10	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Antimony	7440-36-0	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	<5	<5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 892974) - continued									
EP0900767-006	Anonymous	EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 892975)									
EM0901291-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.5	0.6	28.0	No Limit
EP0900767-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 892974)								
EG005T: Antimony	7440-36-0	5	mg/kg	<5	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	103	82.8	119
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	110	89	119
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	92.8	85.4	117
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	105	87.6	116
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	106	85.5	116
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	102	85.4	115
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	96.9	86.6	113
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	100	81.3	111
EG035T: Total Recoverable Mercury by FIMS (QCLot: 892975)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	90.4	71.9	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 892974)							
EM0901291-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	101	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	122	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	101	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.1	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	96.4	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	129	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	118	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	73.1	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.4	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	83.8	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	94.5	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	# Not Determined	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 892975)							
EM0901291-002	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	101	70	130

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0901295**	Page	: 1 of 5
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Steven McGrath
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: steven.mcgrath@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - Werribee Area 4 Asbestos Pipe Removal	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----		
C-O-C number	: ----	Date Samples Received	: 13-FEB-2009
Sampler	: CB, KB	Issue Date	: 20-FEB-2009
Order number	: 39467		
		No. of samples received	: 1
Quote number	: ----	No. of samples analysed	: 1

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils)							
Soil Glass Jar - Unpreserved 4A/QS-12A	**13-FEB-2009**	**18-FEB-2009**	20-FEB-2009	✓	**18-FEB-2009**	18-FEB-2009	✓
EA055: Moisture Content							
Soil Glass Jar - Unpreserved 4A/QS-12A	**13-FEB-2009**	**----**	----	----	**16-FEB-2009**	20-FEB-2009	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved 4A/QS-12A	**13-FEB-2009**	**18-FEB-2009**	12-AUG-2009	✓	**19-FEB-2009**	12-AUG-2009	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved 4A/QS-12A	**13-FEB-2009**	**18-FEB-2009**	12-AUG-2009	✓	**19-FEB-2009**	13-MAR-2009	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	12	**16.7**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	12	**16.7**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (1999) Schedule B(3) (Method 103)
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW 846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EM0901291-002	Anonymous	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005T: Total Metals by ICP-AES	EM0901291-002	Anonymous	**Zinc**	7440-66-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**
- **For all matrices, no Laboratory Control outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- **No Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

CHAIN OF CUSTODY & ANALYSIS REQUEST

OTEK AUSTRALIA PTY LTD
OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

Labmark Environmental
1868 Dandenong Road Clayton 3168
Paul Woodward
96868344

PROJECT # 3106004 | PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Kayne Begbie
kbegbie@otek.com.au

LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ~~ME/055/08~~ Q0227.EM

OTEK PO No.: 39466

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	METALS (see below*) Std	FLUORIDE Std	TPH (C10-C36) Std	Pb Std	PAH/Phenols Std	PAH Std	PHENOLS Std	OCP/OPP Std	OPP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	CRESOLS Std	EXPLOSIVES Std	DIOXINS Std	FULL VIC EPA SCREEN Std	ON HOLD
~~4A/~~T1B	4A/~~T1~~/0.25	0.25		X			X				13/02/09	3		X	X									X	X	X		X	X					
T1B	4A/~~T1~~/0.5	0.50		X			X				"	1		X												X								
T1B	4A/~~T1~~/1.0	1.00		X			X				"	2		X	X									X		X		X	X					
T1B	4A/~~T1~~/2.0	2.00		X			X				"	1																						X
T2B	4A/~~T2~~/0.25	0.25		X			X				"	3		X										X	X	X	X	X	X					
T2B	4A/~~T2~~/0.5	0.50		X			X				"	1																						X
T2B	4A/~~T2~~/1.0	1.00		X			X				"	2												X		X		X	X					
T3B	4A/~~T3~~/0.25	0.25		X			X				"	3		X		X		X			X		X	X	X	X	X	X	X				X	
T3B	4A/~~T3~~/0.5	0.50		X			X				"	1														X								
T3B	4A/~~T3~~/1.0	1.00		X			X				"	2		X		X		X			X		X	X		X	X	X	X					
T3B	4A/~~T3~~/2.0	2.00		X			X				"	1														X								
4A/RB-11			X				X	X			"	1		X																				
4A/TB-11			X				X	X			"	1		X																				
4A/QS-12				X			X				"	1		X												X								
This Page			~~1~~				~~1~~					~~1~~		~~5~~	~~2~~	~~2~~		~~2~~			~~1~~		~~2~~	~~6~~	~~6~~	~~8~~	~~3~~	~~5~~	~~0~~				1	11

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT FORMAT PLEASE

PQLs Required (ug/L)

09ENME0005084-1(1405430)
OTEK_MLB(4A/T1B/0.25)

Relinquished by:	Date	Time	Received by:	Date	Time	Custody Seals Intact?
	13/2/09	11	Michael Cg	13/2/09	12:20	
Relinquished by: Kathmila	13/2/09	11.25	Received by:	Date	Time	Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

PLEASE FORWARD TO ALS

Page 1 of 1

OTEK AUSTRALIA PTY LTD

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CHAIN OF CUSTODY & ANALYSIS REQUEST

ALS
4 Westall Rd Springvale 3171
Paul Loewy
8549 9600

PROJECT # 3106004

PROJECT NAME: Werribee Area 4 Asbestos Pipe Removal

COLLECTORS NAME: Christian Beasley, Kayne Begble
cbeasley@otek.com.au, kbegble@otek.com.au

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT TO: Tom Santywk-Anderson, tsantywk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08

OTEK PO No.: 39467

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED: Metals (see below) Std	Chromium Std	Copper Std	Pb Std	ZINC Std	Nickel Std	OCP/PCBs Std	OCP Std	OPP/OCP Std	CYNIDE & FLOURIDE Std	E.COLI Std	ASBESTOS Std	Ph Std	SVOCs Std	AMMONIA Std	NITRATE Std	NITRITE Std	EXPLOSIVES Std	DIOXINS Std	VIC EPA SCREEN Std	VOH Std	ON HOLD
4A/QS-12A				X			X				13/02/09			X												X								

PQLs Required (ug/L)

Environmental Division
Melbourne
Work Order
EM0901295

Telephone : +61-3-8549 9600

1 week turnaround

RESULTS IN ESDAT FORMAT PLEASE

This Page

Relinquished by	Date	Time	Received by:	Date	Time	Custody Seals Intact?
	13/2/09	11				
Relinquished by:	Date	Time	Received by:	Date	Time	Samples Received Chilled?
	13/2/09	18:25	PATRICK	13/2/09	20:00	

Additional Comments:
* Metals Include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

6 PAC

DATA VALIDATION REPORT

Project Name:	Werribee Area 4, Sub-Area 4A	**Validation Conducted by:**	KJB
Project Number:	3106004	**Signed & Dated:**	18/05/2010
Address:	New Farm Road Werribee		

Primary Laboratory:	LABMARK	**Secondary Laboratory:**	N/A	**Sample Matrix:** (Shade)
Batch Number:	09ENME0005503	**Batch Number:**	N/A	**Soil**
				Water

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
11	-	-	-

Have the Following Criteria Been Met? (Shade)

Blind Replicate	**OK if >5%**	-
Split Sample	**OK if >5%**	-
Blank Samples	**OK**	-

0	Rinsate
0	Field
0	Trip

Explain any Discrepancies:

Qualities contained in other batch

Qualities contained in other batch

Blanks contained in other batch

Refer to OTEK QA/QC results table

Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	Number obtained		
	Sample Identification		
	Total Number of Analytes		
A	**No. of analytes with RPD >50% (Fail)**		**B**
	Number of analytes <50% (Pass)		
	% Pass		

Explain any Discrepancies:

QA/QC sampling (1 in 20, 5%) has been undertaken based on overall batch size and volume for sub-area 4, rather than individual analytical reports.

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number			
Sample Identifictaion			
Number of Analytes			
No. Analytes >PQL **(FAIL)**			
% Pass			
	C	**D**	**E**

Explain any Discrepancies:

Field blank sampling has been undertaken based on overall batch size and volume for Sub Area 4, rather than individual analytical reports.

DATA VALIDATION REPORT

Project Name: Werribee Area 4, Sub-Area 4A

Validation Conducted by: KJB

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	16	
	No. Fails	0	
Analysis	**No. Passes**	19	
	No. Fails	0	

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

Section 3: Laboratory Data Quality - Refer to Certificate of Analysis

Laboratory Internal Duplicates (DUP)	**F**	**G**
	Primary	**Secondary**
TOTAL # Analytes of DUP Samples	21	
# samples RPD >50% **(FAIL)**	0	
% Pass	100	

Laboratory Duplicate RPDs

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Method Blank Analysis (MB)	**H**	**I**
	Primary	**Secondary**
TOTAL # Analytes	159	
# Analytes with RPD >PQL **(FAIL)**	0	
% Pass	100	

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	**J**	**K**
	Primary	**Secondary**
TOTAL # Analytes	136	
# analytes outside range i.e <70% or >130% **(FAIL)**	1	
% Pass	99	

Surrogates

OK (>95%)	99
NOT OK (<95%)	

Explanation for Failures:

Analysis for the following analytes; 3-Chlorophenol & 4-Chlorophenol; fell outside the acceptable OTEK range of <70% or >130%

Laboratory Internal Matrix Spike Recovery	**L**	**M**
	Primary	**Secondary**
TOTAL # Analytes	4	
# Analytes outside range i.e <70% or >130%	0	
% Pass	100	

Internal Spikes

OK (>95%)	100
NOT OK (<95%)	

FINAL DATA

	Sample Type	**Total Data Quality Objective Fails**	**Total Number of Results**	**% Data Quality Objective Passes**
A	**Primary Duplicates**	0	0	-
B	**Secondary Duplicates**	0	0	-
C	**Trip Blanks**	0	0	-
D	**Field Blanks**	0	0	-
E	**Rinsate Blanks**	0	0	-
F & G	**Lab Internal Duplicates**	0	21	100.0
H & I	**Lab Method Blanks**	0	159	100.0
J & K	**Lab Internal Spike Recoveries**	1	136	99.3
L & M	**Laboratory Spike Recoveries**	0	4	100.0
	Total	**1**	**320**	**99.7**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

This Table and/or data is transferred into the QAQC Section of the site report.

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025
Accreditation Number: 1645

LabMark
ENVIRONMENTAL LABORATORIES

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) LUKE DALLAGO
SIGNATURE
DATE 20-4-09

Attention: Tom Santwyk-Anderson

Project	**09ENME0005503**
Client Reference	3106004
	Werribee Area 4
Received Date	16/02/2009 04:52:00 PM

Customer Sample ID			**4A/T1A/0.25**	**4A/T1A/0.5**	**4A/T1A/1.0**	**Q13 4A/T2A/0.25**	**4A/T2A/1.0**
Sample Matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**	**SOIL**
Labmark Sample No.			**1409890**	**1409891**	**1409892**	**1409894**	**1409896**
Date Sampled			**16/02/2009**	**16/02/2009**	**16/02/2009**	**16/02/2009**	**16/02/2009**
Test/Reference	PQL	Unit					
0000 Asbestos in Soil							
Asbestos	-		Not detected	-	-	Not detected	-
SVOC							
Test/Reference	PQL	Unit					
2200 OC Pesticides in Soil by GC-MS							
a-BHC	0.5	mg/kg	-	-	-	<0.5	-
a-Chlordane	0.5	mg/kg	-	-	-	<0.5	-
a-Endosulfan	0.5	mg/kg	-	-	-	<0.5	-
Aldrin	0.5	mg/kg	-	-	-	<0.5	-
b-BHC	0.5	mg/kg	-	-	-	<0.5	-
b-Endosulfan	0.5	mg/kg	-	-	-	<0.5	-
d-BHC	0.5	mg/kg	-	-	-	<0.5	-
DDD	0.5	mg/kg	-	-	-	<0.5	-
DDE	0.5	mg/kg	-	-	-	<0.5	-
DDT	0.5	mg/kg	-	-	-	<0.5	-
Dieldrin	0.5	mg/kg	-	-	-	<0.5	-
Endosulfan sulfate	0.5	mg/kg	-	-	-	<0.5	-
Endrin	0.5	mg/kg	-	-	-	<0.5	-
Endrin Aldehyde	0.5	mg/kg	-	-	-	<0.5	-
g-BHC	0.5	mg/kg	-	-	-	<0.5	-
g-Chlordane	0.5	mg/kg	-	-	-	<0.5	-
Heptachlor	0.5	mg/kg	-	-	-	<0.5	-
Heptachlor epoxide	0.5	mg/kg	-	-	-	<0.5	-
Hexachlorobenzene (HCB)	0.5	mg/kg	-	-	-	<0.5	-
Methoxychlor	0.5	mg/kg	-	-	-	<0.5	-
Oxychlordane	0.5	mg/kg	-	-	-	<0.5	-
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	-	-	-	110	-
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	0.5	mg/kg	-	-	-	<0.5	-
Chlorpyrifos Methyl	0.5	mg/kg	-	-	-	<0.5	-
Diazinon	0.5	mg/kg	-	-	-	<0.5	-
Ethion	0.5	mg/kg	-	-	-	<0.5	-
Fenitrothion	0.5	mg/kg	-	-	-	<0.5	-
Fenthion	0.5	mg/kg	-	-	-	<0.5	-
Malathion	0.5	mg/kg	-	-	-	<0.5	-
Methyl Parathion	0.5	mg/kg	-	-	-	<0.5	-

Customer Sample ID			4A/T1A/0.25	4A/T1A/0.5	4A/T1A/1.0	Q13 4A/T2A/0.25	4A/T2A/1.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1409890	1409891	1409892	1409894	1409896
Date Sampled			16/02/2009	16/02/2009	16/02/2009	16/02/2009	16/02/2009
SVOC							
Test/Reference	PQL	Unit					
Parathion	0.5	mg/kg	-	-	-	<0.5	-
Ronnel	0.5	mg/kg	-	-	-	<0.5	-
Triphenyl Phosphate - OPP SURROGATE	1	%	-	-	-	104	-
2100 PAH in Soil by GC							
Acenaphthene	0.5	mg/kg	-	-	-	<0.5	-
Acenaphthylene	0.5	mg/kg	-	-	-	<0.5	-
Anthracene	0.5	mg/kg	-	-	-	<0.5	-
Benz(a)anthracene	0.5	mg/kg	-	-	-	<0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	-	-	<0.5	-
Benzo(b)&(k)fluoranthene	1	mg/kg	-	-	-	<1	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	-	<0.5	-
Chrysene	0.5	mg/kg	-	-	-	<0.5	-
Dibenz(ah)anthracene	0.5	mg/kg	-	-	-	<0.5	-
Fluoranthene	0.5	mg/kg	-	-	-	<0.5	-
Fluorene	0.5	mg/kg	-	-	-	<0.5	-
Indeno(123-cd)pyrene	0.5	mg/kg	-	-	-	<0.5	-
Naphthalene	0.5	mg/kg	-	-	-	<0.5	-
Phenanthrene	0.5	mg/kg	-	-	-	<0.5	-
Pyrene	0.5	mg/kg	-	-	-	<0.5	-
Sum of PAHs	0.5	mg/kg	-	-	-	<0.5	-
2-Fluorobiphenyl - Surrogate	-	%	-	-	-	97	-
p-Terphenyl-D14 - Surrogate	-	%	-	-	-	99	-
Anthracene-d10 - Surrogate	-	%	-	-	-	90	-
2800 Individual Phenols in Soil by GC							
2,3,4,6-Tetrachlorophenol	1	mg/kg	-	-	-	<1	-
2,3,4-Trichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2,3,5,6-Tetrachlorophenol	1	mg/kg	-	-	-	<1	-
2,3,5-Trichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2,3,6-Trichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2,3-Dichlorophenol	1	mg/kg	-	-	-	<1	-
2,4 & 2,5-Dichlorophenol	2	mg/kg	-	-	-	<2	-
2,4,6-Trichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2,6-Dichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2-Chlorophenol	0.5	mg/kg	-	-	-	<0.5	-
2-Methylphenol	0.5	mg/kg	-	-	-	<0.5	-
3,4-Dichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
3,5-Dichlorophenol	0.5	mg/kg	-	-	-	<0.5	-
3-Chlorophenol & 4-Chlorophenol	1	mg/kg	-	-	-	<1	-
3-Methylphenol & 4-Methylphenol	1	mg/kg	-	-	-	<1	-
4-Chloro-3-methylphenol	0.5	mg/kg	-	-	-	<0.5	-
Pentachlorophenol	1	mg/kg	-	-	-	<1	-
Phenol	0.5	mg/kg	-	-	-	<0.5	-
2,4,6-Tribromophenol-Surrogate	1	%	-	-	-	45	-
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	0.5	mg/kg	-	-	-	<0.5	-
Butyl benzyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Dibutyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Diethyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Dimethyl phthalate	0.5	mg/kg	-	-	-	<0.5	-

Customer Sample ID			4A/T1A/0.25	4A/T1A/0.5	4A/T1A/1.0	Q13 4A/T2A/0.25	4A/T2A/1.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1409890	1409891	1409892	1409894	1409896
Date Sampled			16/02/2009	16/02/2009	16/02/2009	16/02/2009	16/02/2009
SVOC							
Test/Reference	PQL	Unit					
Di-n-octyl phthalate	0.5	mg/kg	-	-	-	<0.5	-
Total Phthalate	3.0	mg/kg	-	-	-	<3.0	-
Metals							
Test/Reference	PQL	Unit					
3400 Mercury in Soil by FIMS							
Mercury	0.01	mg/kg	0.02	-	0.02	0.02	-
3100 Total Metals in Soil By ICP/MS							
Antimony	2	mg/kg	<2	-	<2	<2	-
Arsenic	2	mg/kg	3.5	-	3.6	3.0	-
Barium	2	mg/kg	55	-	72	53	-
Beryllium	2	mg/kg	<2	-	<2	<2	-
Boron	2	mg/kg	<2	-	<2	3.0	-
Cadmium	2	mg/kg	<2	-	<2	<2	-
Chromium	2	mg/kg	28	-	26	27	-
Cobalt	2	mg/kg	11	-	8.4	11	-
Copper	2	mg/kg	9.2	-	10	8.5	-
Lead	2	mg/kg	11	-	6.2	9.9	-
Manganese	2	mg/kg	350	-	140	360	-
Molybdenum	2	mg/kg	<2	-	<2	<2	-
Nickel	2	mg/kg	17	-	21	15	-
Selenium	2	mg/kg	<2	-	<2	<2	-
Tin	2	mg/kg	<2	-	<2	<2	-
Vanadium	2	mg/kg	32	-	29	29	-
Zinc	2	mg/kg	32	-	31	31	-
Inorganics							
Test/Reference	PQL	Unit					
4300 Anions in Soil by IC							
Fluoride (Soluble)	2	mg/kg	4.9	-	2.9	-	-
Nitrate as N (Soluble)	2	mg/kg	2.7	-	<2	<2	<2
4520 Ammonia in Soil by Titration							
Ammonia as N	2	mg/kg	<2	-	<2	<2	<2
4000 pH in Soil							
pH	0.1	pH	7.2	5.6	7.4	7.9	7.5
Miscellaneous							
Test/Reference	PQL	Unit					
5000 Moisture Content							
% Moisture	1	%	6	11	4	6	4
Micro							
Test/Reference	PQL	Unit					
6621 E. coli by MPN							
E. coli*	-	MPNorgs/g	<1	-	<1	<1	<1

Customer Sample ID			Q13 4A/T3A/0.25	4A/T3A/0.5	Q13 4A/T3A/1.0	4A/T3A/2.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1409897	1409898	1409899	1409900
Date Sampled			16/02/2009	16/02/2009	16/02/2009	16/02/2009
Test/Reference	PQL	Unit				
0000 Asbestos in Soil						

Customer Sample ID			Q13 4A/T3A/0.25	4A/T3A/0.5	Q13 4A/T3A/1.0	4A/T3A/2.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1409897	1409898	1409899	1409900
Date Sampled			16/02/2009	16/02/2009	16/02/2009	16/02/2009
Test/Reference	PQL	Unit				
Asbestos	-		Not detected	-	-	-
VOC						
Test/Reference	PQL	Unit				
1100 TPH (C6-C9) in Soil by P&T						
4-Bromofluorobenzene - Surrogate	-	%	114	-	-	-
C6-C9 Fraction	5	mg/kg	<5.0	-	-	-
1300 VOCs in Soil by P&T						
Pentafluorobenzene-Surrogate	1	%	102	-	-	-
Toluene-D8 - Surrogate	1	%	91	-	-	-
4-Bromofluorobenzene - Surrogate	1	%	94	-	-	-
Dichlorodifluoromethane	1	mg/kg	<1.0	-	-	-
Chloromethane	1	mg/kg	<1.0	-	-	-
Vinyl Chloride	1	mg/kg	<1.0	-	-	-
Bromomethane	1	mg/kg	<1.0	-	-	-
Chloroethane	1	mg/kg	<1.0	-	-	-
Trichlorofluoromethane	1	mg/kg	<1.0	-	-	-
1,1-Dichloroethene	1	mg/kg	<1.0	-	-	-
Methylene Chloride	5	mg/kg	<5.0	-	-	-
trans-1,2-Dichloroethene	1	mg/kg	<1.0	-	-	-
1,1-Dichloroethane	1	mg/kg	<1.0	-	-	-
2-butanone	10	mg/kg	<10.0	-	-	-
cis-1,2-Dichloroethene	1	mg/kg	<1.0	-	-	-
Bromochloromethane	1	mg/kg	<1.0	-	-	-
Chloroform	1	mg/kg	<1.0	-	-	-
2,2-Dichloropropane	10	mg/kg	<10.0	-	-	-
1,2-Dichloroethane	1	mg/kg	<1.0	-	-	-
1,1,1-Trichloroethane	1	mg/kg	<1.0	-	-	-
1,1-Dichloropropylene	1	mg/kg	<1.0	-	-	-
Carbon Tetrachloride	1	mg/kg	<1.0	-	-	-
Benzene	0.2	mg/kg	<0.2	-	-	-
Dibromomethane	1	mg/kg	<1.0	-	-	-
1,2-Dichloropropane	1	mg/kg	<1.0	-	-	-
Trichloroethene	1	mg/kg	<1.0	-	-	-
Bromodichloromethane	1	mg/kg	<1.0	-	-	-
cis-1,3-Dichloropropene	1	mg/kg	<1.0	-	-	-
4-methyl-2-pentanone	10	mg/kg	<10.0	-	-	-
trans-1,3-Dichloropropene	1	mg/kg	<1.0	-	-	-
1,1,2-Trichloroethane	1	mg/kg	<1.0	-	-	-
Toluene	1	mg/kg	<1.0	-	-	-
1,3-Dichloropropane	1	mg/kg	<1.0	-	-	-
Dibromochloromethane	1	mg/kg	<1.0	-	-	-
1,2-Dibromoethane	1	mg/kg	<1.0	-	-	-
Tetrachloroethene	1	mg/kg	<1.0	-	-	-
1,1,1,2-Tetrachloroethane	1	mg/kg	<1.0	-	-	-
Chlorobenzene	1	mg/kg	<1.0	-	-	-
Ethylbenzene	1	mg/kg	<1.0	-	-	-
Meta- & Para- Xylene	2	mg/kg	<2.0	-	-	-
Bromoform	1	mg/kg	<1.0	-	-	-
Styrene	0.5	mg/kg	<0.5	-	-	-
1,1,2,2-Tetrachloroethane	1	mg/kg	<1.0	-	-	-

Customer Sample ID			Q13 4A/T3A/0.25	4A/T3A/0.5	Q13 4A/T3A/1.0	4A/T3A/2.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1409897	1409898	1409899	1409900
Date Sampled			16/02/2009	16/02/2009	16/02/2009	16/02/2009
VOC						
Test/Reference	PQL	Unit				
Ortho-Xylene	1	mg/kg	<1.0	-	-	-
1,2,3-Trichloropropane	1	mg/kg	<1.0	-	-	-
Isopropylbenzene	0.5	mg/kg	<0.5	-	-	-
Bromobenzene	1	mg/kg	<1.0	-	-	-
n-Propylbenzene	1	mg/kg	<1.0	-	-	-
2-Chlorotoluene	1	mg/kg	<1.0	-	-	-
4-Chlorotoluene	1	mg/kg	<1.0	-	-	-
1,3,5-Trimethylbenzene	1	mg/kg	<1.0	-	-	-
Pentachloroethane	1	mg/kg	<1.0	-	-	-
tert-Butylbenzene	1	mg/kg	<1.0	-	-	-
1,2,4-Trimethylbenzene	1	mg/kg	<1.0	-	-	-
sec-Butylbenzene	1	mg/kg	<1.0	-	-	-
1,3-Dichlorobenzene	1	mg/kg	<1.0	-	-	-
1,4-Dichlorobenzene	1	mg/kg	<1.0	-	-	-
p-Isopropyltoluene	1	mg/kg	<1.0	-	-	-
1,2-Dichlorobenzene	1	mg/kg	<1.0	-	-	-
n-Butylbenzene	1	mg/kg	<1.0	-	-	-
1,2-Dibromo-3-chloropropane	1	mg/kg	<1.0	-	-	-
Hexachloroethane	1	mg/kg	<1.0	-	-	-
1,2,4-Trichlorobenzene	1	mg/kg	<1.0	-	-	-
Naphthalene	1	mg/kg	<1.0	-	-	-
Hexachlorobutadiene	1	mg/kg	<1.0	-	-	-
1,2,3-Trichlorobenzene	1	mg/kg	<1.0	-	-	-
Total Xylenes	3	mg/kg	<3.0	-	-	-
SVOC						
Test/Reference	PQL	Unit				
2200 OC Pesticides in Soil by GC-MS						
a-BHC	0.5	mg/kg	<0.5	-	<0.5	-
a-Chlordane	0.5	mg/kg	<0.5	-	<0.5	-
a-Endosulfan	0.5	mg/kg	<0.5	-	<0.5	-
Aldrin	0.5	mg/kg	<0.5	-	<0.5	-
b-BHC	0.5	mg/kg	<0.5	-	<0.5	-
b-Endosulfan	0.5	mg/kg	<0.5	-	<0.5	-
d-BHC	0.5	mg/kg	<0.5	-	<0.5	-
DDD	0.5	mg/kg	<0.5	-	<0.5	-
DDE	0.5	mg/kg	<0.5	-	<0.5	-
DDT	0.5	mg/kg	<0.5	-	<0.5	-
Dieldrin	0.5	mg/kg	<0.5	-	<0.5	-
Endosulfan sulfate	0.5	mg/kg	<0.5	-	<0.5	-
Endrin	0.5	mg/kg	<0.5	-	<0.5	-
Endrin Aldehyde	0.5	mg/kg	<0.5	-	<0.5	-
g-BHC	0.5	mg/kg	<0.5	-	<0.5	-
g-Chlordane	0.5	mg/kg	<0.5	-	<0.5	-
Heptachlor	0.5	mg/kg	<0.5	-	<0.5	-
Heptachlor epoxide	0.5	mg/kg	<0.5	-	<0.5	-
Hexachlorobenzene (HCB)	0.5	mg/kg	<0.5	-	<0.5	-
Methoxychlor	0.5	mg/kg	<0.5	-	<0.5	-
Oxychlordane	0.5	mg/kg	<0.5	-	<0.5	-
2.4.5.6-tetrachloro-m-xylene-SURROGATE	1	%	111	-	106	-

Customer Sample ID			Q13 4A/T3A/0.25	4A/T3A/0.5	Q13 4A/T3A/1.0	4A/T3A/2.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1409897	1409898	1409899	1409900
Date Sampled			16/02/2009	16/02/2009	16/02/2009	16/02/2009
SVOC						
Test/Reference	PQL	Unit				
2400 OP Pesticides in Soil by GC						
Chlorpyrifos	0.5	mg/kg	<0.5	-	<0.5	-
Chlorpyrifos Methyl	0.5	mg/kg	<0.5	-	<0.5	-
Diazinon	0.5	mg/kg	<0.5	-	<0.5	-
Ethion	0.5	mg/kg	<0.5	-	<0.5	-
Fenitrothion	0.5	mg/kg	<0.5	-	<0.5	-
Fenthion	0.5	mg/kg	<0.5	-	<0.5	-
Malathion	0.5	mg/kg	<0.5	-	<0.5	-
Methyl Parathion	0.5	mg/kg	<0.5	-	<0.5	-
Parathion	0.5	mg/kg	<0.5	-	<0.5	-
Ronnel	0.5	mg/kg	<0.5	-	<0.5	-
Triphenyl Phosphate - OPP SURROGATE	1	%	101	-	98	-
2100 PAH in Soil by GC						
Acenaphthene	0.5	mg/kg	<0.5	-	<0.5	-
Acenaphthylene	0.5	mg/kg	<0.5	-	<0.5	-
Anthracene	0.5	mg/kg	<0.5	-	<0.5	-
Benz(a)anthracene	0.5	mg/kg	<0.5	-	<0.5	-
Benzo(a)pyrene	0.5	mg/kg	<0.5	-	<0.5	-
Benzo(b)&(k)fluoranthene	1	mg/kg	<1	-	<1	-
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5	-	<0.5	-
Chrysene	0.5	mg/kg	<0.5	-	<0.5	-
Dibenz(ah)anthracene	0.5	mg/kg	<0.5	-	<0.5	-
Fluoranthene	0.5	mg/kg	<0.5	-	<0.5	-
Fluorene	0.5	mg/kg	<0.5	-	<0.5	-
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5	-	<0.5	-
Naphthalene	0.5	mg/kg	<0.5	-	<0.5	-
Phenanthrene	0.5	mg/kg	<0.5	-	<0.5	-
Pyrene	0.5	mg/kg	<0.5	-	<0.5	-
Sum of PAHs	0.5	mg/kg	<0.5	-	<0.5	-
2-Fluorobiphenyl - Surrogate	-	%	98	-	94	-
p-Terphenyl-D14 - Surrogate	-	%	98	-	99	-
Anthracene-d10 - Surrogate	-	%	90	-	87	-
2600 PCBs in Soil by GC						
Aroclor 1016DB	0.5	mg/kg	<0.5	-	-	-
Aroclor 1221DB	0.5	mg/kg	<0.5	-	-	-
Aroclor 1232 and 1242 as totalDB	1	mg/kg	<1	-	-	-
Aroclor 1248 and 1254 as totalDB	1	mg/kg	<1	-	-	-
Aroclor 1260DB	0.5	mg/kg	<0.5	-	-	-
Total Polychlorinated biphenylsDB	1	mg/kg	<1	-	-	-
Decachlorobiphenyl - PCB surrogate	1	%	106	-	-	-
2800 Individual Phenols in Soil by GC						
2,3,4,6-Tetrachlorophenol	1	mg/kg	<1	-	<1	-
2,3,4-Trichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-
2,3,5,6-Tetrachlorophenol	1	mg/kg	<1	-	<1	-
2,3,5-Trichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-
2,3,6-Trichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-
2,3-Dichlorophenol	1	mg/kg	<1	-	<1	-
2,4 & 2,5-Dichlorophenol	2	mg/kg	<2	-	<2	-
2,4,6-Trichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-

Customer Sample ID			Q13 4A/T3A/0.25	4A/T3A/0.5	Q13 4A/T3A/1.0	4A/T3A/2.0
Sample Matrix			SOIL	SOIL	SOIL	SOIL
Labmark Sample No.			1409897	1409898	1409899	1409900
Date Sampled			16/02/2009	16/02/2009	16/02/2009	16/02/2009
SVOC						
Test/Reference	PQL	Unit				
2,6-Dichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-
2-Chlorophenol	0.5	mg/kg	<0.5	-	<0.5	-
2-Methylphenol	0.5	mg/kg	<0.5	-	<0.5	-
3,4-Dichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-
3,5-Dichlorophenol	0.5	mg/kg	<0.5	-	<0.5	-
3-Chlorophenol & 4-Chlorophenol	1	mg/kg	<1	-	<1	-
3-Methylphenol & 4-Methylphenol	1	mg/kg	<1	-	<1	-
4-Chloro-3-methylphenol	0.5	mg/kg	<0.5	-	<0.5	-
Pentachlorophenol	1	mg/kg	<1	-	<1	-
Phenol	0.5	mg/kg	<0.5	-	<0.5	-
2,4,6-Tribromophenol-Surrogate	1	%	42	-	44	-
2880 Phthalates in Soil by GC						
bis (2-ethylhexyl) phthalate	0.5	mg/kg	<0.5	-	<0.5	-
Butyl benzyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-
Dibutyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-
Diethyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-
Dimethyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-
Di-n-octyl phthalate	0.5	mg/kg	<0.5	-	<0.5	-
Total Phthalate	3.0	mg/kg	<3.0	-	<3.0	-
2000 TPH (C10 - C36) in Soil by GC						
C10-C14 Fraction	10	mg/kg	<10	-	<10	-
C15-C28 Fraction	20	mg/kg	21	-	<20	-
C29-C36 Fraction	20	mg/kg	23	-	<20	-
Metals						
Test/Reference	PQL	Unit				
3400 Mercury in Soil by FIMS						
Mercury	0.01	mg/kg	0.02	-	0.01	-
3100 Total Metals in Soil By ICP/MS						
Antimony	2	mg/kg	<2	-	<2	-
Arsenic	2	mg/kg	3.3	-	3.5	-
Barium	2	mg/kg	53	-	59	-
Beryllium	2	mg/kg	<2	-	<2	-
Boron	2	mg/kg	<2	-	<2	-
Cadmium	2	mg/kg	<2	-	<2	-
Chromium	2	mg/kg	24	-	23	-
Cobalt	2	mg/kg	10	-	9.1	-
Copper	2	mg/kg	8.1	-	8.9	-
Lead	2	mg/kg	11	-	5.8	-
Manganese	2	mg/kg	360	-	170	-
Molybdenum	2	mg/kg	<2	-	<2	-
Nickel	2	mg/kg	15	-	18	-
Selenium	2	mg/kg	<2	-	<2	-
Tin	2	mg/kg	<2	-	<2	-
Vanadium	2	mg/kg	27	-	25	-
Zinc	2	mg/kg	29	-	26	-
Inorganics						
Test/Reference	PQL	Unit				
4300 Anions in Soil by IC						
Fluoride (Soluble)	2	mg/kg	<2	-	<2	-

Customer Sample ID			Q13 4A/T3A/0.25	4A/T3A/0.5	Q13 4A/T3A/1.0	4A/T3A/2.0
Sample Matrix			**SOIL**	**SOIL**	**SOIL**	**SOIL**
Labmark Sample No.			**1409897**	**1409898**	**1409899**	**1409900**
Date Sampled			**16/02/2009**	**16/02/2009**	**16/02/2009**	**16/02/2009**
Inorganics						
Test/Reference	PQL	Unit				
Nitrate as N (Soluble)	2	mg/kg	<2	-	<2	-
4270 Total Cyanide in Soil Colourmetric						
Total Cyanide	0.1	mg/kg	0.5	-	0.1	-
4520 Ammonia in Soil by Titration						
Ammonia as N	2	mg/kg	<2	-	<2	-
4000 pH in Soil						
pH	0.1	pH	6.9	6.0	6.4	8.7
4850 Total Phenolics in Soil by SFA						
Total Phenolics	0.1	mg/kg	<0.1	-	-	-
Miscellaneous						
Test/Reference	PQL	Unit				
5000 Moisture Content						
% Moisture	1	%	5	-	4	-
Micro						
Test/Reference	PQL	Unit				
6621 E. coli by MPN						
E. coli*	-	MPNorgs/g	<1	-	<1	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
0000 Asbestos in Soil	Melbourne 0	N/A	20/02/2009
1100 TPH (C6-C9) in Soil by P&T	Melbourne 1645	19/02/2009	24/02/2009
1300 VOCs in Soil by P&T	Melbourne 1645	18/02/2009	20/02/2009
2000 TPH (C10 - C36) in Soil by GC	Melbourne 1645	18/02/2009	22/02/2009
2100 PAH in Soil by GC	Melbourne 1645	18/02/2009	19/02/2009
2200 OC Pesticides in Soil by GC-MS	Melbourne 1645	18/02/2009	19/02/2009
2400 OP Pesticides in Soil by GC	Melbourne 1645	18/02/2009	19/02/2009
2600 PCBs in Soil by GC	Melbourne 1645	18/02/2009	19/02/2009
2800 Individual Phenols in Soil by GC	Melbourne 1645	18/02/2009	21/02/2009
2880 Phthalates in Soil by GC	Melbourne 1645	18/02/2009	19/02/2009
3100 Total Metals in Soil By ICP/MS	Melbourne 1645	24/02/2009	25/02/2009
3400 Mercury in Soil by FIMS	Melbourne 1645	24/02/2009	26/02/2009
4000 pH in Soil	Melbourne 1645	24/02/2009	20/02/2009
4270 Total Cyanide in Soil Colourmetric	Melbourne 1645	20/02/2009	24/02/2009
4300 Anions in Soil by IC	Melbourne 1645	18/02/2009	19/02/2009
4520 Ammonia in Soil by Titration	Melbourne 1645	18/02/2009	19/02/2009
4850 Total Phenolics in Soil by SFA	Melbourne 1645	23/02/2009	24/02/2009
5000 Moisture Content	Melbourne 1645	N/A	18/02/2009
6621 E. coli by MPN	Melbourne	N/A	19/02/2009

Labmark Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
9. Samples were analysed on an as received basis.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1421854 [Method Blank]							
3100 Metals in Soil - As Received							
Antimony	mg/kg	<2			< 2	Pass	
Arsenic	mg/kg	<2			< 2	Pass	
Barium	mg/kg	<2			< 2	Pass	
Beryllium	mg/kg	<2			< 2	Pass	
Boron	mg/kg	<2			< 2	Pass	
Cadmium	mg/kg	<2			< 2	Pass	
Chromium	mg/kg	<2			< 2	Pass	
Cobalt	mg/kg	<2			< 2	Pass	
Copper	mg/kg	<2			< 2	Pass	
Lead	mg/kg	<2			< 2	Pass	
Manganese	mg/kg	<2			< 2	Pass	
Molybdenum	mg/kg	<2			< 2	Pass	
Nickel	mg/kg	<2			< 2	Pass	
Selenium	mg/kg	<2			< 2	Pass	
Tin	mg/kg	<2			< 2	Pass	
Vanadium	mg/kg	<2			< 2	Pass	
Zinc	mg/kg	<2			< 2	Pass	
1422230 [Method Blank]							
3400 Mercury in Soil by FIMS							
Mercury	mg/kg	<0.01			< 0.01	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1421855 [Laboratory Control Sample]							
3100 Metals in Soil - As Received			Expected Value	Percent Recovery			
Antimony	mg/kg	110	100.0	106	70-130 %	Pass	
Arsenic	mg/kg	80	100.0	80	70-130 %	Pass	
Barium	mg/kg	100	100.0	101	70-130 %	Pass	
Beryllium	mg/kg	99	100.0	99	70-130 %	Pass	
Boron	mg/kg	100	100.0	102	70-130 %	Pass	
Cadmium	mg/kg	110	100.0	105	70-130 %	Pass	
Chromium	mg/kg	100	100.0	102	70-130 %	Pass	
Cobalt	mg/kg	98	100.0	98	70-130 %	Pass	
Copper	mg/kg	100	100.0	100	70-130 %	Pass	
Lead	mg/kg	99	100.0	99	70-130 %	Pass	
Manganese	mg/kg	100	100.0	102	70-130 %	Pass	
Molybdenum	mg/kg	100	100.0	104	70-130 %	Pass	
Nickel	mg/kg	100	100.0	102	70-130 %	Pass	
Selenium	mg/kg	100	100.0	105	70-130 %	Pass	
Tin	mg/kg	110	100.0	112	70-130 %	Pass	
Vanadium	mg/kg	100	100.0	100	70-130 %	Pass	
Zinc	mg/kg	100	100.0	104	70-130 %	Pass	
1422231 [Laboratory Control Sample]							
3400 Mercury in Soil by FIMS			Expected Value	Percent Recovery			
Mercury	mg/kg	11	10.0	113	80-120 %	Pass	
1410381 [Duplicate of 1409890]							
3400 Mercury in Soil by FIMS			Result 2	RPD			
Mercury	mg/kg	0.02	0.02	10	0-30 %	Pass	
1410382 [Duplicate of 1409890]							
3100 Total Metals in Soil By ICP/MS			Result 2	RPD			
Antimony	mg/kg	<2	<2	N/A	N/A	N/A	
Arsenic	mg/kg	3.7	3.5	N/A	N/A	N/A	
Barium	mg/kg	52	55	N/A	N/A	N/A	
Beryllium	mg/kg	<2	<2	N/A	N/A	N/A	
Boron	mg/kg	<2	<2	N/A	N/A	N/A	
Cadmium	mg/kg	<2	<2	N/A	N/A	N/A	
Chromium	mg/kg	29	28	N/A	N/A	N/A	
Cobalt	mg/kg	11	11	N/A	N/A	N/A	
Copper	mg/kg	9.6	9.2	N/A	N/A	N/A	
Lead	mg/kg	11	11	N/A	N/A	N/A	
Manganese	mg/kg	360	350	N/A	N/A	N/A	
Molybdenum	mg/kg	<2	<2	N/A	N/A	N/A	
Nickel	mg/kg	18	17	N/A	N/A	N/A	
Selenium	mg/kg	<2	<2	N/A	N/A	N/A	
Tin	mg/kg	<2	<2	N/A	N/A	N/A	
Vanadium	mg/kg	31	32	N/A	N/A	N/A	
Zinc	mg/kg	32	32	N/A	N/A	N/A	
1410386 [Spike of 1409892]							
3400 Mercury in Soil by FIMS			Spike Value	Percent Recovery			
Mercury	mg/kg	10	10.0	102	80-120 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1411136 [Method Blank]							
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	mg/kg	<10			< 10	Pass	
C15-C28 Fraction	mg/kg	<20			< 20	Pass	
C29-C36 Fraction	mg/kg	<20			< 20	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1411138 [Method Blank]							
2100 PAH in Soil by GC							
Acenaphthene	mg/kg	<0.5			< 0.5	Pass	
Acenaphthylene	mg/kg	<0.5			< 0.5	Pass	
Anthracene	mg/kg	<0.5			< 0.5	Pass	
Benz(a)anthracene	mg/kg	<0.5			< 0.5	Pass	
Benzo(a)pyrene	mg/kg	<0.5			< 0.5	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	<1			< 1	Pass	
Benzo(g.h.i)perylene	mg/kg	<0.5			< 0.5	Pass	
Chrysene	mg/kg	<0.5			< 0.5	Pass	
Dibenz(ah)anthracene	mg/kg	<0.5			< 0.5	Pass	
Fluoranthene	mg/kg	<0.5			< 0.5	Pass	
Fluorene	mg/kg	<0.5			< 0.5	Pass	
Indeno(123-cd)pyrene	mg/kg	<0.5			< 0.5	Pass	
Naphthalene	mg/kg	<0.5			< 0.5	Pass	
Phenanthrene	mg/kg	<0.5			< 0.5	Pass	
Pyrene	mg/kg	<0.5			< 0.5	Pass	
Sum of PAHs	mg/kg	<0.5			< 0.5	Pass	
2-Fluorobiphenyl - Surrogate	%	104			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	98			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	109			70-130 %	Pass	
2200 OC Pesticides in Soil by GC-MS							
a-BHC	mg/kg	<0.5			< 0.5	Pass	
a-Chlordane	mg/kg	<0.5			< 0.5	Pass	
a-Endosulfan	mg/kg	<0.5			< 0.5	Pass	
Aldrin	mg/kg	<0.5			< 0.5	Pass	
b-BHC	mg/kg	<0.5			< 0.5	Pass	
b-Endosulfan	mg/kg	<0.5			< 0.5	Pass	
d-BHC	mg/kg	<0.5			< 0.5	Pass	
DDD	mg/kg	<0.5			< 0.5	Pass	
DDE	mg/kg	<0.5			< 0.5	Pass	
DDT	mg/kg	<0.5			< 0.5	Pass	
Dieldrin	mg/kg	<0.5			< 0.5	Pass	
Endosulfan sulfate	mg/kg	<0.5			< 0.5	Pass	
Endrin	mg/kg	<0.5			< 0.5	Pass	
Endrin Aldehyde	mg/kg	<0.5			< 0.5	Pass	
g-BHC	mg/kg	<0.5			< 0.5	Pass	
g-Chlordane	mg/kg	<0.5			< 0.5	Pass	
Heptachlor	mg/kg	<0.5			< 0.5	Pass	
Heptachlor epoxide	mg/kg	<0.5			< 0.5	Pass	
Hexachlorobenzene (HCB)	mg/kg	<0.5			< 0.5	Pass	
Methoxychlor	mg/kg	<0.5			< 0.5	Pass	
Oxychlordane	mg/kg	<0.5			< 0.5	Pass	
2.4.5.6-tetrachloro-m-xylene-SURROGATE	%	114			70-130 %	Pass	
2400 OP Pesticides in Soil by GC							
Chlorpyrifos	mg/kg	<0.5			< 0.5	Pass	
Chlorpyrifos Methyl	mg/kg	<0.5			< 0.5	Pass	
Diazinon	mg/kg	<0.5			< 0.5	Pass	
Ethion	mg/kg	<0.5			< 0.5	Pass	
Fenitrothion	mg/kg	<0.5			< 0.5	Pass	
Fenthion	mg/kg	<0.5			< 0.5	Pass	
Malathion	mg/kg	<0.5			< 0.5	Pass	
Methyl Parathion	mg/kg	<0.5			< 0.5	Pass	
Parathion	mg/kg	<0.5			< 0.5	Pass	
Ronnel	mg/kg	<0.5			< 0.5	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	108			70-130 %	Pass	
2600 PCBs in Soil by GC							
Aroclor 1016	mg/kg	<0.5			< 0.5	Pass	
Aroclor 1221	mg/kg	<0.5			< 0.5	Pass	
Aroclor 1232 and 1242 as total	mg/kg	<1			< 1	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1411138 [Method Blank]							
2600 PCBs in Soil by GC							
Aroclor 1248 and 1254 as total	mg/kg	<1			< 1	Pass	
Aroclor 1260	mg/kg	<0.5			< 0.5	Pass	
Total Polychlorinated biphenyls	mg/kg	<1			< 1	Pass	
Decachlorobiphenyl - PCB surrogate	%	122			70-130 %	Pass	
2800 Individual Phenols in Soil by GC							
2,3,4,6-Tetrachlorophenol	mg/kg	<1			< 1	Pass	
2,3,4-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	<1			< 1	Pass	
2,3,5-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3,6-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,3-Dichlorophenol	mg/kg	<1			< 1	Pass	
2,4&2,5-Dichlorophenol	mg/kg	<2			< 2	Pass	
2,4,6-Trichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2,6-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
2-Chlorophenol	mg/kg	<0.5			< 0.5	Pass	
2-Methylphenol	mg/kg	<0.5			< 0.5	Pass	
3,4-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
3,5-Dichlorophenol	mg/kg	<0.5			< 0.5	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	<1			< 1	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	<1			< 1	Pass	
4-Chloro-3-methylphenol	mg/kg	<0.5			< 0.5	Pass	
Pentachlorophenol	mg/kg	<1			< 1	Pass	
Phenol	mg/kg	<0.5			< 0.5	Pass	
2,4,6-Tribromophenol-Surrogate	%	52			50-130 %	Pass	
2880 Phthalates in Soil by GC							
bis (2-ethylhexyl) phthalate	mg/kg	<0.5			< 0.5	Pass	
Butyl benzyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Dibutyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Diethyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Dimethyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Di-n-octyl phthalate	mg/kg	<0.5			< 0.5	Pass	
Total Phthalate	mg/kg	<3.0			< 3.0	Pass	
1411137 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	130	125.0	102	70-130 %	Pass	
C15-C28 Fraction	mg/kg	120	125.0	98	70-130 %	Pass	
C29-C36 Fraction	mg/kg	140	125.0	111	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1411139 [Laboratory Control Sample]							Q13
2100 PAH in Soil by GC			Expected Value	Percent Recovery			
Acenaphthene	mg/kg	2.2	2.0	112	70-130 %	Pass	
Acenaphthylene	mg/kg	2.1	2.0	104	70-130 %	Pass	
Anthracene	mg/kg	2.3	2.0	116	70-130 %	Pass	
Benz(a)anthracene	mg/kg	2.2	2.0	109	70-130 %	Pass	
Benzo(a)pyrene	mg/kg	2.2	2.0	112	70-130 %	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	4.4	4.0	111	70-130 %	Pass	
Benzo(g.h.i)perylene	mg/kg	2.0	2.0	99	70-130 %	Pass	
Chrysene	mg/kg	2.2	2.0	108	70-130 %	Pass	
Dibenz(ah)anthracene	mg/kg	2.0	2.0	99	70-130 %	Pass	
Fluoranthene	mg/kg	2.2	2.0	111	70-130 %	Pass	
Fluorene	mg/kg	2.2	2.0	109	70-130 %	Pass	
Indeno(123-cd)pyrene	mg/kg	2.0	2.0	101	70-130 %	Pass	
Naphthalene	mg/kg	2.2	2.0	109	70-130 %	Pass	
Phenanthrene	mg/kg	2.3	2.0	115	70-130 %	Pass	
Pyrene	mg/kg	2.2	2.0	109	70-130 %	Pass	
Sum of PAHs	mg/kg	35	32.0	108	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	98			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	95			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	97			70-130 %	Pass	
2200 OC Pesticides in Soil by GC-MS			Expected Value	Percent Recovery			
a-BHC	mg/kg	2.0	2.0	101	70-130 %	Pass	
a-Chlordane	mg/kg	2.0	2.0	99	70-130 %	Pass	
a-Endosulfan	mg/kg	1.9	2.0	96	70-130 %	Pass	
Aldrin	mg/kg	2.1	2.0	104	70-130 %	Pass	
b-BHC	mg/kg	2.0	2.0	101	70-130 %	Pass	
b-Endosulfan	mg/kg	2.0	2.0	100	70-130 %	Pass	
d-BHC	mg/kg	2.2	2.0	108	70-130 %	Pass	
DDD	mg/kg	2.0	2.0	100	70-130 %	Pass	
DDE	mg/kg	2.0	2.0	102	70-130 %	Pass	
DDT	mg/kg	1.7	2.0	86	70-130 %	Pass	
Dieldrin	mg/kg	2.0	2.0	102	70-130 %	Pass	
Endosulfan sulfate	mg/kg	1.6	2.0	81	70-130 %	Pass	
Endrin	mg/kg	2.1	2.0	104	70-130 %	Pass	
Endrin Aldehyde	mg/kg	2.0	2.0	98	70-130 %	Pass	
g-BHC	mg/kg	2.0	2.0	102	70-130 %	Pass	
g-Chlordane	mg/kg	2.0	2.0	99	70-130 %	Pass	
Heptachlor	mg/kg	1.9	2.0	96	70-130 %	Pass	
Heptachlor epoxide	mg/kg	1.9	2.0	94	70-130 %	Pass	
Hexachlorobenzene (HCB)	mg/kg	1.9	2.0	95	70-130 %	Pass	
Methoxychlor	mg/kg	1.8	2.0	90	70-130 %	Pass	
Oxychlordane	mg/kg	<0.5	N/A	N/A	N/A	N/A	
2400 OP Pesticides in Soil by GC			Expected Value	Percent Recovery			
Chlorpyrifos	mg/kg	2.1	2.0	105	70-130 %	Pass	
Chlorpyrifos Methyl	mg/kg	2.2	2.0	108	70-130 %	Pass	
Diazinon	mg/kg	2.6	N/A	N/A	N/A	N/A	
Ethion	mg/kg	1.9	2.0	94	70-130 %	Pass	
Fenitrothion	mg/kg	2.0	2.0	100	70-130 %	Pass	
Fenthion	mg/kg	2.3	2.0	116	70-130 %	Pass	
Malathion	mg/kg	1.9	2.0	94	70-130 %	Pass	
Methyl Parathion	mg/kg	1.9	2.0	96	70-130 %	Pass	
Parathion	mg/kg	2.0	2.0	101	70-130 %	Pass	
Ronnel	mg/kg	2.2	2.0	111	70-130 %	Pass	
Triphenyl Phosphate - OPP SURROGATE	%	94			70-130 %	Pass	
2600 PCBs in Soil by GC			Expected Value	Percent Recovery			
Aroclor 1016	mg/kg	2.2	2.0	108	70-130 %	Pass	
Aroclor 1221	mg/kg	<0.5	N/A	N/A	N/A	N/A	
Aroclor 1232 and 1242 as total	mg/kg	<1	N/A	N/A	N/A	N/A	
Aroclor 1248 and 1254 as total	mg/kg	2.3	2.0	115	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1411139 [Laboratory Control Sample]							Q13
2600 PCBs in Soil by GC			Expected Value	Percent Recovery			
Aroclor 1260	mg/kg	2.2	2.0	112	70-130 %	Pass	
Total Polychlorinated biphenyls	mg/kg	6.7	N/A	N/A	N/A	N/A	
Decachlorobiphenyl - PCB surrogate	%	98			70-130 %	Pass	
1411140 [Laboratory Control Sample]							
2800 Individual Phenols in Soil by GC			Expected Value	Percent Recovery			
2,3,4,6-Tetrachlorophenol	mg/kg	3.4	4.0	84	50-130 %	Pass	
2,3,4-Trichlorophenol	mg/kg	2.9	4.0	72	50-130 %	Pass	
2,3,5,6-Tetrachlorophenol	mg/kg	4.0	4.0	99	50-130 %	Pass	
2,3,5-Trichlorophenol	mg/kg	2.8	4.0	70	50-130 %	Pass	
2,3,6-Trichlorophenol	mg/kg	3.0	4.0	74	50-130 %	Pass	
2,3-Dichlorophenol	mg/kg	2.8	4.0	70	50-130 %	Pass	
2,4&2,5-Dichlorophenol	mg/kg	6.0	8.0	74	50-130 %	Pass	
2,4,6-Trichlorophenol	mg/kg	3.0	4.0	76	50-130 %	Pass	
2,6-Dichlorophenol	mg/kg	2.9	4.0	72	50-130 %	Pass	
2-Chlorophenol	mg/kg	2.8	4.0	70	50-130 %	Pass	
2-Methylphenol	mg/kg	2.8	4.0	70	50-130 %	Pass	
3,4-Dichlorophenol	mg/kg	3.0	4.0	74	50-130 %	Pass	
3,5-Dichlorophenol	mg/kg	3.0	4.0	74	50-130 %	Pass	
3-Chlorophenol & 4-Chlorophenol	mg/kg	5.4	8.0	68	50-130 %	Pass	
3-Methylphenol & 4-Methylphenol	mg/kg	5.8	8.0	73	50-130 %	Pass	
4-Chloro-3-methylphenol	mg/kg	2.9	4.0	73	50-130 %	Pass	
Pentachlorophenol	mg/kg	6.8	8.0	86	50-130 %	Pass	
Phenol	mg/kg	2.9	4.0	72	50-130 %	Pass	
2,4,6-Tribromophenol-Surrogate	%	70			50-130 %	Pass	
1411141 [Laboratory Control Sample]							
2880 Phthalates in Soil by GC			Expected Value	Percent Recovery			
bis (2-ethylhexyl) phthalate	mg/kg	2.0	2.0	100	70-130 %	Pass	
Butyl benzyl phthalate	mg/kg	1.9	2.0	94	70-130 %	Pass	
Dibutyl phthalate	mg/kg	1.9	2.0	94	70-130 %	Pass	
Diethyl phthalate	mg/kg	1.8	2.0	88	70-130 %	Pass	
Dimethyl phthalate	mg/kg	1.9	2.0	96	70-130 %	Pass	
Di-n-octyl phthalate	mg/kg	1.9	2.0	95	70-130 %	Pass	
Total Phthalate	mg/kg	11	12.0	94	70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1412193 [Method Blank]							
1300 VOCs in Soil by P&T							
1,1,1,2-Tetrachloroethane	mg/kg	<1.0			< 1	Pass	
1,1,1-Trichloroethane	mg/kg	<1.0			< 1	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	<1.0			< 1	Pass	
1,1,2-Trichloroethane	mg/kg	<1.0			< 1	Pass	
1,1-Dichloroethane	mg/kg	<1.0			< 1	Pass	
1,1-Dichloroethene	mg/kg	<1.0			< 1	Pass	
1,1-Dichloropropylene	mg/kg	<1.0			< 1	Pass	
1,2,3-Trichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2,3-Trichloropropane	mg/kg	<1.0			< 1	Pass	
1,2,4-Trichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2,4-Trimethylbenzene	mg/kg	<1.0			< 1	Pass	
1,2-Dibromo-3-chloropropane	mg/kg	<1.0			< 1	Pass	
1,2-Dibromoethane	mg/kg	<1.0			< 1	Pass	
1,2-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,2-Dichloroethane	mg/kg	<1.0			< 1	Pass	
1,2-Dichloropropane	mg/kg	<1.0			< 1	Pass	
1,3,5-Trimethylbenzene	mg/kg	<1.0			< 1	Pass	
1,3-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
1,3-Dichloropropane	mg/kg	<1.0			< 1	Pass	
1,4-Dichlorobenzene	mg/kg	<1.0			< 1	Pass	
2,2-Dichloropropane	mg/kg	<10.0			< 10	Pass	
2-butanone	mg/kg	<10.0			< 10	Pass	
2-Chlorotoluene	mg/kg	<1.0			< 1	Pass	
4-Chlorotoluene	mg/kg	<1.0			< 1	Pass	
4-methyl-2-pentanone	mg/kg	<10.0			< 10	Pass	
Benzene	mg/kg	<0.2			< 0.2	Pass	
Bromobenzene	mg/kg	<1.0			< 1	Pass	
Bromochloromethane	mg/kg	<1.0			< 1	Pass	
Bromodichloromethane	mg/kg	<1.0			< 1	Pass	
Bromoform	mg/kg	<1.0			< 1	Pass	
Bromomethane	mg/kg	<1.0			< 1	Pass	
Carbon Tetrachloride	mg/kg	<1.0			< 1	Pass	
Chlorobenzene	mg/kg	<1.0			< 1	Pass	
Chloroethane	mg/kg	<1.0			< 1	Pass	
Chloroform	mg/kg	<1.0			< 1	Pass	
Chloromethane	mg/kg	<1.0			< 1	Pass	
cis-1,2-Dichloroethene	mg/kg	<1.0			< 1	Pass	
cis-1,3-Dichloropropene	mg/kg	<1.0			< 1	Pass	
Dibromochloromethane	mg/kg	<1.0			< 1	Pass	
Dibromomethane	mg/kg	<1.0			< 1	Pass	
Dichlorodifluoromethane	mg/kg	<1.0			< 1	Pass	
Ethylbenzene	mg/kg	<1.0			< 1	Pass	
Hexachlorobutadiene	mg/kg	<1.0			< 1	Pass	
Hexachloroethane	mg/kg	<1.0			< 1	Pass	
Isopropylbenzene	mg/kg	<0.5			< 0.5	Pass	
Meta- & Para- Xylene	mg/kg	<2.0			< 2	Pass	
Methylene Chloride	mg/kg	<5.0			< 5	Pass	
Naphthalene	mg/kg	<1.0			< 1	Pass	
n-Butylbenzene	mg/kg	<1.0			< 1	Pass	
n-Propylbenzene	mg/kg	<1.0			< 1	Pass	
Ortho-Xylene	mg/kg	<1.0			< 1	Pass	
Pentachloroethane	mg/kg	<1.0			< 1	Pass	
p-Isopropyltoluene	mg/kg	<1.0			< 1	Pass	
sec-Butylbenzene	mg/kg	<1.0			< 1	Pass	
Styrene	mg/kg	<0.5			< 0.5	Pass	
tert-Butylbenzene	mg/kg	<1.0			< 1	Pass	
Tetrachloroethene	mg/kg	<1.0			< 1	Pass	
Toluene	mg/kg	<1.0			< 1	Pass	
Total Xylenes	mg/kg	<3.0			< 3	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1412193 [Method Blank]							
1300 VOCs in Soil by P&T							
trans-1,2-Dichloroethene	mg/kg	<1.0			< 1	Pass	
trans-1,3-Dichloropropene	mg/kg	<1.0			< 1	Pass	
Trichloroethene	mg/kg	<1.0			< 1	Pass	
Trichlorofluoromethane	mg/kg	<1.0			< 1	Pass	
Vinyl Chloride	mg/kg	<1.0			< 1	Pass	
1413259 [Method Blank]							
1100 BTEX in Soil by P&T							
Benzene	mg/kg	<0.2			< 0.2	Pass	
C6-C9 Fraction	mg/kg	<5			< 5	Pass	
Ethylbenzene	mg/kg	<1			< 1	Pass	
Meta- & Para- Xylene	mg/kg	<2			< 2	Pass	
Ortho-Xylene	mg/kg	<1			< 1	Pass	
Toluene	mg/kg	<1			< 1	Pass	
Total Xylenes	mg/kg	<3			< 3	Pass	
4-Bromofluorobenzene - Surrogate	%	92			70-130 %	Pass	
1412195 [Laboratory Control Sample]							
1300 VOCs in Soil by P&T			Expected Value	Percent Recovery			
1,1,1-Trichloroethane	mg/kg	10	10.0	103	70-130 %	Pass	
1,1,2,2-Tetrachloroethane	mg/kg	7.9	10.0	79	70-130 %	Pass	
1,1,2-Trichloroethane	mg/kg	9.6	10.0	96	70-130 %	Pass	
1,1-Dichloroethane	mg/kg	9.8	10.0	98	70-130 %	Pass	
1,1-Dichloroethene	mg/kg	9.2	10.0	92	70-130 %	Pass	
1,2-Dichlorobenzene	mg/kg	9.9	10.0	99	70-130 %	Pass	
1,2-Dichloroethane	mg/kg	9.2	10.0	92	70-130 %	Pass	
1,2-Dichloropropane	mg/kg	9.9	10.0	99	70-130 %	Pass	
1,3-Dichlorobenzene	mg/kg	10	10.0	105	70-130 %	Pass	
1,4-Dichlorobenzene	mg/kg	11	10.0	107	70-130 %	Pass	
Benzene	mg/kg	10	10.0	103	70-130 %	Pass	
Bromodichloromethane	mg/kg	9.1	10.0	91	70-130 %	Pass	
Bromoform	mg/kg	8.2	10.0	82	70-130 %	Pass	
Carbon Tetrachloride	mg/kg	10	10.0	101	70-130 %	Pass	
Chlorobenzene	mg/kg	11	10.0	107	70-130 %	Pass	
Chloroform	mg/kg	10	10.0	101	70-130 %	Pass	
cis-1,3-Dichloropropene	mg/kg	9.9	10.0	99	70-130 %	Pass	
Dibromochloromethane	mg/kg	8.9	10.0	89	70-130 %	Pass	
Ethylbenzene	mg/kg	11	10.0	111	70-130 %	Pass	
Methylene Chloride	mg/kg	8.6	10.0	86	70-130 %	Pass	
Tetrachloroethene	mg/kg	11	10.0	109	70-130 %	Pass	
Toluene	mg/kg	12	10.0	116	70-130 %	Pass	
trans-1,2-Dichloroethene	mg/kg	9.1	10.0	91	70-130 %	Pass	
trans-1,3-Dichloropropene	mg/kg	9.4	10.0	94	70-130 %	Pass	
Trichloroethene	mg/kg	10	10.0	104	70-130 %	Pass	
1413260 [Laboratory Control Sample]							
1100 BTEX in Soil by P&T			Expected Value	Percent Recovery			
Benzene	mg/kg	6.3	5.0	126	70-130 %	Pass	
C6-C9 Fraction	mg/kg	55	50.0	110	70-130 %	Pass	
Ethylbenzene	mg/kg	5.9	5.0	118	70-130 %	Pass	
Meta- & Para- Xylene	mg/kg	12	10.0	118	70-130 %	Pass	
Ortho-Xylene	mg/kg	5.7	5.0	114	70-130 %	Pass	
Toluene	mg/kg	6.1	5.0	122	70-130 %	Pass	
Total Xylenes	mg/kg	18	15.0	117	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	96			70-130 %	Pass	

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1411053 [Method Blank]							
4300 Anions in Soil by IC							
Bromide (Soluble)	mg/kg	<2			< 2	Pass	
Chloride (Soluble)	mg/kg	<2			< 2	Pass	
Fluoride (Soluble)	mg/kg	<2			< 2	Pass	
Nitrate (Soluble)	mg/kg	<2			< 2	Pass	
Nitrite (Soluble)	mg/kg	<2			< 2	Pass	
Orthophosphorus (Soluble)	mg/kg	<2			< 2	Pass	
Sulphate (Soluble)	mg/kg	<2			< 2	Pass	
1415342 [Method Blank]							
4270 Total Cyanide in Soil Colourmetric							
Total Cyanide	mg/kg	<0.1			< 0.1	Pass	
1418193 [Method Blank]							
4850 Total Phenolics in Soil by SFA							
Total Phenolics	mg/kg	<0.1			< 0.1	Pass	
1410926 [Laboratory Control Sample]							
4520 Ammonia in Soil by Titration			Expected Value	Percent Recovery			
Ammonia as N	mg/kg	100	100.0	104	70-130 %	Pass	
1411055 [Laboratory Control Sample]							
4300 Anions in Soil by IC			Expected Value	Percent Recovery			
Bromide (Soluble)	mg/kg	590	500.0	117	75-125 %	Pass	
Chloride (Soluble)	mg/kg	600	500.0	119	75-125 %	Pass	
Fluoride (Soluble)	mg/kg	560	500.0	113	75-125 %	Pass	
Nitrate (Soluble)	mg/kg	590	500.0	118	75-125 %	Pass	
Nitrite (Soluble)	mg/kg	510	500.0	102	75-125 %	Pass	
Orthophosphorus (Soluble)	mg/kg	510	500.0	102	75-125 %	Pass	
Sulphate (Soluble)	mg/kg	590	500.0	118	75-125 %	Pass	
1413773 [Laboratory Control Sample]							
4000 pH in Soil			Expected Value	Percent Recovery			
pH	pH	7.3	N/A	N/A	N/A	N/A	
1415345 [Laboratory Control Sample]							
4270 Total Cyanide in Soil Colourmetric			Expected Value	Percent Recovery			
Total Cyanide	mg/kg	0.5	0.5	104	70-130 %	Pass	
1418195 [Laboratory Control Sample]							
4850 Total Phenolics in Soil by SFA			Expected Value	Percent Recovery			
Total Phenolics	mg/kg	0.5	0.5	108	70-130 %	Pass	
1410380 [Duplicate of 1409890]							
4300 Anions in Soil by IC			Result 2	RPD			
Fluoride (Soluble)	mg/kg	4.6	4.9	6	0-20 %	Pass	
Nitrate as N (Soluble)	mg/kg	2.3	2.7	18	0-20 %	Pass	
1410383 [Duplicate of 1409890]							
4520 Ammonia in Soil by Titration			Result 2	RPD			
Ammonia as N	mg/kg	<2	<2	<1	0-25 %	Pass	
1410385 [Spike of 1409892]							
4300 Anions in Soil by IC			Spike Value	Percent Recovery			
Fluoride (Soluble)	mg/kg	480	500.0	96	75-125 %	Pass	
Nitrate (Soluble)	mg/kg	600	500.0	119	75-125 %	Pass	
1410388 [Spike of 1409892]							
4520 Ammonia in Soil by Titration			Spike Value	Percent Recovery			
Ammonia as N	mg N/kg	99	100.0	99	70-130 %	Pass	
dilution factor	-	1	N/A	N/A	N/A	N/A	

Report Results Information

Asbestos in Soil	Amdel Mineral Chemistry, Accreditation: 1526, report number 9AA0113K.

Project Comments

Comments	Extra Samples 4A/RB12 and 4A/TB12 Water have been put on hold.

Sample Integrity

Custody Seals Intact (if used)	No
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes

Qualifier Codes/Comments

Code	Description
Q13	Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. For any failed elements; positive results in blind samples can only be used as a guide. All other QC has passed in this test batch.

Authorised By

Alex Petridis	Senior Analyst - SVOC	
Elizabeth Davison	Client Services Officer	
Niloufer Lobo	Analyst - Microbiology	
Ruth Callander	Client Services Officer	
Barry Blythman	Senior Analyst - VOC	Accreditation Number: 1645
Mark Herbstreit	Senior Analyst - Metals	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Olga Alieva	Analyst - SVOC	Accreditation Number: 1645
Patricia Hua	Senior Analyst	Accreditation Number: 1645

Laboratory Manager

David Elliott	Laboratory Manager - Melbourne

Final Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Laboratory staff.

Sample Receipt Advice

LabMark
ENVIRONMENTAL LABORATORIES

Customer Service - 1300 552 389

Client Name:	OTEK AUSTRALIA PTY LTD	**Date Received:**	16 February 2009
Attention:	Tom Santwyk-Anderson	**Due Date:**	24 February 2009
Client Reference number:	3106004 Werribee Area 4	**Turnaround:**	Standard

Laboratory Reference Number:	09ENME0005503	**Your Laboratory Contact:**	Ruth Callander +61 3 9538 2277

If you have any queries regarding turnaround and sample progress, technical queries or wish to make changes please contact the laboratory immediately.

Job Information

Project Comments

Comments	Extra Samples 4A/RB12 and 4A/TB12 Water have been put on hold.

Sample Integrity

Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	Yes
Custody Seals Intact (if used)	No

Analysis Requested

Analysis Requested	Method Code	Number Of Samples
Anions in Soil by IC	4300	6
Asbestos in Soil	0000	3
TPH (C6-C9) in Soil by P&T	1100	1
Total Cyanide in Soil Colourmetric	4270	2
E. coli by MPN	6621	6
Mercury in Soil by FIMS	3400	5
Total Metals in Soil By ICP/MS	3100	5
Moisture Content	5000	7
Ammonia in Soil by Titration	4520	6
OC Pesticides in Soil by GC-MS	2200	3
OP Pesticides in Soil by GC	2400	3
PAH in Soil by GC	2100	3
PCBs in Soil by GC	2600	1
pH in Soil	4000	9
Individual Phenols in Soil by GC	2800	3
Phthalates in Soil by GC	2880	3
Total Phenolics in Soil by SFA	4850	1
TPH (C10 - C36) in Soil by GC	2000	2
VOCs in Soil by P&T	1300	1

Note

- Turn Around Time starts when samples are received at the Laboratory
- For samples received after 4pm, Turn Around Time starts the next working day
- For samples received on the last day of holding time, notification of testing requirements must be given at least 6 hours prior to the sample receipt deadlines; Should the laboratory not receive the information in the required timeframe a suitably qualified results may still be reported.
- Surcharges may apply for 24, 48 and 72 hour turnaround.
- Water samples will be discarded after 4 weeks unless notified.
- Soil samples are chilled for 1 month and will be discarded after 3 months unless notified.
- Samples submitted for Micro analysis on a Friday may incur a $150 surcharge and / or be analysed outside holding time (24 Hour Holding Time).
- The Quoted Due Date does not apply to sub-contracted tests or some in-house tests. Contact your Customer Support Officer for details

  NOTE: Unless advised otherwise - Sample analysis will commence regardless of integrity issues and / or non-conformance and these will be recorded on the final report.

Logged in by : Kim Jolly

Date : Tue 17 February 2009

THIS NOTE - ECOLI to BE SAMPLED.

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OTEK AUSTRALIA PTY LTD

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda, 3182.
ACN 054 371 596
Ph (03) 9525 5155
Fx (03) 9593 8555

CHAIN OF CUSTODY & ANALYSIS REQUEST

Labmark Environmental
1868 Dandenong Road Clayton 3168
Paul Woodward
96868344

PROJECT # 3106004

PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Kayne Begbie
kbegbie@otek.com.au

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☑ EMAIL

FINAL REPORT BY: Email to: tsantwyk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08

OTEK PO No.:

REMARKS

SAMPLE ID	DEPTH	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE
4A/T1A/0.25	0.25			X			X				16/2/09	3	
4A/T1A/0.5	0.50			X			X					2	
4A/T1A/1.0	1.00			X			X					2	
4A/T1A/2.0	2.00			X			X					1	
4A/T2A/0.25	0.25			X			X					3	
4A/T2A/0.5	0.50			X			X					1	
4A/T2A/1.0	1.00			X			X					2	
4A/T3A/0.25	0.25			X			X					3	
4A/T3A/0.5	0.50			X			X					1	
4A/T3A/1.0	1.00			X			X					2	
4A/T3A/2.0	2.00			X			X					1	
This Page				11			11					11	

ANALYSIS REQUIRED

	METALS (see below*)	FLUORIDE	TPH (C10-C36)	Pb	PAH/Phenols	PAH	PHENOLS	OCP/OPP	OPP	CYNIDE & FLOURIDE	E.COLI	ASBESTOS	Ph	SVOCs	AMMONIA	NITRATE	CRESOLS	EXPLOSIVES	DIOXINS	FULL VIC EPA SCREEN	ON HOLD
	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	Std	
4A/T1A/0.25	X	X									X	X	X		X	X					
4A/T1A/0.5													X								
4A/T1A/1.0	X	X									X		X		X	X					
4A/T1A/2.0																					X
4A/T2A/0.25	X										X	X	X	X	X	X					
4A/T2A/0.5																					X
4A/T2A/1.0											X		X		X	X					
4A/T3A/0.25	X		X		X			X		X	X	X	X	X	X	X				X	
4A/T3A/0.5													X								
4A/T3A/1.0	X		X		X			X		X	X		X	X	X	X					
4A/T3A/2.0													X								
This Page	5	2	2		2			2		2	6	3	9	3	6	6				1	11

PQLs Required (ug/L)

STANDARD 1 WEEK TURN AROUND
ALL DATA REQUIRED IN ESDAT FORMAT PLEASE

09ENVE0005503-1(1409890)
OTEK_MLB(4A/T1A/0.25)

Relinquished by:	Date	Time	Received by:	Date	Time
	16/2/09	3:30			
Relinquished by:	Date	Time	Received by:	Date	Time
	16/2/09			16/2/09	5pm

Custody Seals Intact?

Samples Received Chilled?

Additional Comments:

* Metals include: As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn

DATA VALIDATION REPORT

Project Name:	Werribee Sub-Area 4A - Well Installation	**Validation Conducted by:**	CEC
Project Number:	3106004	**Signed & Dated:**	24/03/2011
Address:	New Farm Road Werribee		

				Sample Matrix: (Shade)
Primary Laboratory:	ALS	**Secondary Laboratory:**	LabMark	**Soil**
Batch Number:	EM0910684	**Batch Number:**	09ENME003875	**Water**

COMPONENT	ASSESSMENT	COMMENTS

Section 1: OTEK SAMPLING RATIO

Frequency of OTEK Samples

Samples Analysed			
TOTAL # Primary Samples ONLY	# blind (internal lab)	# split (secondary lab)	#Blanks
5	1	1	2

Have the Following Criteria Been Met? (Shade)

				Explain any Discrepancies:
Blind Replicate	**OK if >5%**	20	**NOT OK if <5%**	
Split Sample	**OK if >5%**	20	**NOT OK if <5%**	
Blank Samples	**OK**	2	**NOT OK**	

1 Rinsate
Field
1 Trip

Refer to OTEK QA/QC results table

	Field Primary Duplicates (Blind)		Field Secondary Duplicates (Split)	
	1	**Number obtained**	1	
	MW-8/QS-1	**Sample Identification**	MW-8/QS-1A	
A	26	**Total Number of Analytes**	24	**B**
	0	**No. of analytes with RPD >50% (Fail)**	0	
	26	**Number of analytes <50% (Pass)**	24	
	100.0	**% Pass**	100.0	

Explain any Discrepancies:

Equipment/Rinsate/Trip Blank Analysis - Cross Contamination Identifier

Refer to Laboratory Cert. of Analysis

	Trip	Field	Rinsate
Total Number	1		1
Sample Identifictaion	MW-8/TB-1		MW-8/RB-1
Number of Analytes	13		13
No. Analytes >PQL **(FAIL)**	0		0
% Pass	100.00		100.00
	C	**D**	**E**

Explain any Discrepancies:

Section 2: INTERNAL LABORATORY QUALITY SYSTEM

Refer to: Interpretive Quality Control Report

		Primary Lab	Secondary Lab
Extraction/Preparation	**No. Passes**	6	4
	No. Fails	0	0
Analysis	**No. Passes**	8	5
	No. Fails	0	0

Explain any Discrepancies:

Handy Hints for Assessing Holding Times (that have not been specified)

1. Review holding times stated in laboratory report
2. Review Laboratory Extraction Dates

DATA VALIDATION REPORT

Project Name: Werribee Sub-Area 4A - Well Installation

Validation Conducted by: CEC

Section 3: **Laboratory Data Quality - Refer to Certificate of Analysis**

Laboratory Internal Duplicates (DUP)	F	G
	Primary	Secondary
TOTAL # Analytes of DUP Samples	53	37
# samples RPD >50% **(FAIL)**	9	0
% Pass	83	100

Laboratory Duplicate RPDs

OK (>95%)	92
NOT OK (<95%)	

Explanation for Failures:

ALS exceedences of RPD>50% for an anonymous sampple for Phenanthrene (53.9%), Flouranthene (58.9), Benz(a)anthracene (94.1%), Chrysen (75%), Benzo(b)flouranthene)63.2%), Benzo(k)flouranthene (79.6), Benzo(a)pyrene (58.5%), Indeno(1.2.3.cd)perylene (57.6%), Benzo(g.h.i)perylene (53.0%)

Method Blank Analysis (MB)	H	I
	Primary	Secondary
TOTAL # Analytes	27	37
# Analytes with RPD >PQL **(FAIL)**	0	0
% Pass	100	100

Method Blanks

OK (>95%)	100
NOT OK (<95%)	

Explanation for Failures:

Surrogate Internal Spike Recovery (LCS, LS)	J	K
	Primary	Secondary
TOTAL # Analytes	27	0
# analytes outside range i.e <70% or >130% **(FAIL)**	2	0
% Pass	93	#DIV/0!

Surrogates

OK (>95%)	#####
NOT OK (<95%)	

Explanation for Failures:

One Analyte for the primary lab, Acenaphthylene exceeded Spike Recovery range (131%)

Laboratory Internal Matrix Spike Recovery	L	M
	Primary	Secondary
TOTAL # Analytes	9	0
# Analytes outside range i.e <70% or >130%	0	0
% Pass	100	#DIV/0!

Internal Spikes

OK (>95%)	#####
NOT OK (<95%)	

Explanation for Failures:

FINAL DATA

	Sample Type	Total Data Quality Objective Fails	Total Number of Results	% Data Quality Objective Passes
A	Primary Duplicates	0	26	100.0
B	Secondary Duplicates	0	24	100.0
C	Trip Blanks	0	13	100.0
D	Field Blanks	0	0	-
E	Rinsate Blanks	0	13	100.0
F & G	Lab Internal Duplicates	9	90	90.0
H & I	Lab Method Blanks	0	64	100.0
J & K	Lab Internal Spike Recoveries	2	27	92.6
L & M	Laboratory Spike Recoveries	0	9	100.0
	Total	**11**	**266**	**95.9**

Overall Explanation for Failures:

Pass = >95%

Fail = <95%

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Accreditation Number: 1645

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ENVIRONMENTAL LABORATORIES

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: Tom Santwyk-Anderson

Project	**09ENME0038575**
Client Reference	3106004/1001
	4B Remediation
Order Number	0772
Received Date	28/10/2009 12:00:00 AM

Customer Sample ID	**MW-8/QS-1 A**
Sample Matrix	**SOIL**
Labmark Sample No.	**1797903**
Date Sampled	**26/10/2009**

VOC

Test/Reference	PQL	Unit	
1100 BTEX &(C6-C9) in Soil by P&T			
4-Bromofluorobenzene - Surrogate	-	%	92
Benzene	0.2	mg/kg	<0.2
Toluene	1	mg/kg	<1.0
Ethylbenzene	1	mg/kg	<1.0
Meta- & Para- Xylene	2	mg/kg	<2.0
Ortho-Xylene	1	mg/kg	<1.0
Total Xylenes	3	mg/kg	<3.0
C6-C9 Fraction	5	mg/kg	<5.0

SVOC

Test/Reference	PQL	Unit	
2100 PAH in Soil by GC			
Acenaphthene	0.5	mg/kg	<0.5
Acenaphthylene	0.5	mg/kg	<0.5
Anthracene	0.5	mg/kg	<0.5
Benz(a)anthracene	0.5	mg/kg	<0.5
Benzo(a)pyrene	0.5	mg/kg	<0.5
Benzo(b)&(k)fluoranthene	1	mg/kg	<1
Benzo(g.h.i)perylene	0.5	mg/kg	<0.5
Chrysene	0.5	mg/kg	<0.5
Dibenz(ah)anthracene	0.5	mg/kg	<0.5
Fluoranthene	0.5	mg/kg	<0.5
Fluorene	0.5	mg/kg	<0.5
Indeno(123-cd)pyrene	0.5	mg/kg	<0.5
Naphthalene	0.5	mg/kg	<0.5
Phenanthrene	0.5	mg/kg	<0.5
Pyrene	0.5	mg/kg	<0.5
Sum of PAHs	0.5	mg/kg	<0.5
2-Fluorobiphenyl - Surrogate	-	%	110
p-Terphenyl-D14 - Surrogate	-	%	100
Anthracene-d10 - Surrogate	-	%	112
2000 TPH (C10 - C36) in Soil by GC			
C10-C14 Fraction	10	mg/kg	<10
C15-C28 Fraction	20	mg/kg	<20

Customer Sample ID			**MW-8/QS-1 A**
Sample Matrix			**SOIL**
Labmark Sample No.			**1797903**
Date Sampled			**26/10/2009**
SVOC			
Test/Reference	PQL	Unit	
C29-C36 Fraction	20	mg/kg	<20
Metals			
Test/Reference	PQL	Unit	
3100 Total Metals in Soil By ICP/MS			
Lead	2	mg/kg	11
Miscellaneous			
Test/Reference	PQL	Unit	
5000 Moisture Content			
% Moisture	1	%	11

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
1100 BTEX &(C6-C9) in Soil by P&T	Melbourne 1645	30/10/2009	01/11/2009
2000 TPH (C10 - C36) in Soil by GC	Melbourne 1645	29/10/2009	30/10/2009
2100 PAH in Soil by GC	Melbourne 1645	29/10/2009	31/10/2009
3100 Total Metals in Soil By ICP/MS	Melbourne 1645	30/10/2009	02/11/2009
5000 Moisture Content	Melbourne 1645	N/A	29/10/2009

Labmark Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
9. Samples were analysed on an as received basis.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1801083 [Method Blank]							
3100 Metals in Soil - As Received							
Arsenic	mg/kg	<2			< 2	Pass	
Barium	mg/kg	<2			< 2	Pass	
Cadmium	mg/kg	<2			< 2	Pass	
Chromium	mg/kg	<2			< 2	Pass	
Cobalt	mg/kg	<2			< 2	Pass	
Copper	mg/kg	<2			< 2	Pass	
Lead	mg/kg	<2			< 2	Pass	
Manganese	mg/kg	<2			< 2	Pass	
Nickel	mg/kg	<2			< 2	Pass	
Vanadium	mg/kg	<2			< 2	Pass	
Zinc	mg/kg	<2			< 2	Pass	
1801087 [Laboratory Control Sample]							
3100 Metals in Soil - As Received			Expected Value	Percent Recovery			
Arsenic	mg/kg	100	100.0	105	70-130 %	Pass	
Barium	mg/kg	110	100.0	112	70-130 %	Pass	
Cadmium	mg/kg	110	100.0	106	70-130 %	Pass	
Chromium	mg/kg	100	100.0	103	70-130 %	Pass	
Cobalt	mg/kg	100	100.0	103	70-130 %	Pass	
Copper	mg/kg	110	100.0	106	70-130 %	Pass	
Lead	mg/kg	98	100.0	98	70-130 %	Pass	
Manganese	mg/kg	110	100.0	106	70-130 %	Pass	
Nickel	mg/kg	110	100.0	108	70-130 %	Pass	
Vanadium	mg/kg	100	100.0	103	70-130 %	Pass	
Zinc	mg/kg	110	100.0	106	70-130 %	Pass	

Laboratory: **EN_SVOC**

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1797116 [Method Blank]							
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	mg/kg	<10			< 10	Pass	
C15-C28 Fraction	mg/kg	<20			< 20	Pass	
C29-C36 Fraction	mg/kg	<20			< 20	Pass	
1797118 [Method Blank]							
2100 PAH in Soil by GC							
Acenaphthene	mg/kg	<0.5			< 0.5	Pass	
Acenaphthylene	mg/kg	<0.5			< 0.5	Pass	
Anthracene	mg/kg	<0.5			< 0.5	Pass	
Benz(a)anthracene	mg/kg	<0.5			< 0.5	Pass	
Benzo(a)pyrene	mg/kg	<0.5			< 0.5	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	<1			< 1	Pass	
Benzo(g.h.i)perylene	mg/kg	<0.5			< 0.5	Pass	
Chrysene	mg/kg	<0.5			< 0.5	Pass	
Dibenz(ah)anthracene	mg/kg	<0.5			< 0.5	Pass	
Fluoranthene	mg/kg	<0.5			< 0.5	Pass	
Fluorene	mg/kg	<0.5			< 0.5	Pass	
Indeno(123-cd)pyrene	mg/kg	<0.5			< 0.5	Pass	
Naphthalene	mg/kg	<0.5			< 0.5	Pass	
Phenanthrene	mg/kg	<0.5			< 0.5	Pass	
Pyrene	mg/kg	<0.5			< 0.5	Pass	
Sum of PAHs	mg/kg	<0.5			< 0.5	Pass	
2-Fluorobiphenyl - Surrogate	%	92			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	104			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	98			70-130 %	Pass	
1797117 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	130	125.0	108	70-130 %	Pass	
C15-C28 Fraction	mg/kg	140	125.0	110	70-130 %	Pass	
C29-C36 Fraction	mg/kg	120	125.0	99	70-130 %	Pass	
1797119 [Laboratory Control Sample]							Q13
2100 PAH in Soil by GC			Expected Value	Percent Recovery			
Acenaphthene	mg/kg	2.1	2.0	104	70-130 %	Pass	
Acenaphthylene	mg/kg	<0.5	N/A	N/A	N/A	N/A	
Anthracene	mg/kg	2.0	2.0	100	70-130 %	Pass	
Benz(a)anthracene	mg/kg	1.9	2.0	94	70-130 %	Pass	
Benzo(a)pyrene	mg/kg	1.9	2.0	95	70-130 %	Pass	
Benzo(b)&(k)fluoranthene	mg/kg	3.7	4.0	93	70-130 %	Pass	
Benzo(g.h.i)perylene	mg/kg	1.9	2.0	96	70-130 %	Pass	
Chrysene	mg/kg	1.9	2.0	96	70-130 %	Pass	
Dibenz(ah)anthracene	mg/kg	2.0	2.0	99	70-130 %	Pass	
Fluoranthene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Fluorene	mg/kg	2.0	2.0	102	70-130 %	Pass	
Indeno(123-cd)pyrene	mg/kg	2.0	2.0	100	70-130 %	Pass	
Naphthalene	mg/kg	2.1	2.0	105	70-130 %	Pass	
Phenanthrene	mg/kg	2.0	2.0	101	70-130 %	Pass	
Pyrene	mg/kg	2.0	2.0	101	70-130 %	Pass	
Sum of PAHs	mg/kg	30	32.0	93	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	93			70-130 %	Pass	
Anthracene-d10 - Surrogate	%	104			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	93			70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1799607 [Method Blank]							
1100 BTEX in Soil by P&T							
Benzene	mg/kg	<0.2			< 0.2	Pass	
C6-C9 Fraction	mg/kg	<5.0			< 5	Pass	
Ethylbenzene	mg/kg	<1.0			< 1	Pass	
Meta- & Para- Xylene	mg/kg	<2.0			< 2	Pass	
Ortho-Xylene	mg/kg	<1.0			< 1	Pass	
Toluene	mg/kg	<1.0			< 1	Pass	
Total Xylenes	mg/kg	<3.0			< 3	Pass	
4-Bromofluorobenzene - Surrogate	%	86			70-130 %	Pass	
1799609 [Laboratory Control Sample]							
1100 BTEX in Soil by P&T			Expected Value	Percent Recovery			
Benzene	mg/kg	5.8	5.0	115	70-130 %	Pass	
C6-C9 Fraction	mg/kg	64	50.0	130	70-130 %	Pass	
Ethylbenzene	mg/kg	5.7	5.0	114	70-130 %	Pass	
Meta- & Para- Xylene	mg/kg	11	10.0	112	70-130 %	Pass	
Ortho-Xylene	mg/kg	5.6	5.0	111	70-130 %	Pass	
Toluene	mg/kg	5.9	5.0	118	70-130 %	Pass	
Total Xylenes	mg/kg	17	15.0	112	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	99			70-130 %	Pass	

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
Q13	Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. For any failed elements; positive results in blind samples can only be used as a guide. All other QC has passed in this test batch.

Authorised By

Ruth Callander	Client Services Officer	
Alex Petridis	Senior Analyst - SVOC	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Khoa Pham	Analyst - VOC	Accreditation Number: 1645
Olga Alieva	Analyst - SVOC	Accreditation Number: 1645
Patricia Hua	Senior Analyst	Accreditation Number: 1645

Laboratory Manager

David Elliott — Laboratory Manager - Melbourne

Final Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Laboratory staff.

PROJECT: 09ENME0038575

Client: OTEK AUSTRALIA PTY LTD

Contact: Vic Reception
Ph: **Fax:**
Debtor Code: 174910
Contract Number: 4896
Quarantine Samp: No

Due Date:	5/11/2009 2:00:00PM
Order Number:	0772
Project Reference:	3106004/1001
Lab Contact:	RCALLANDER

Date Received: 28/10/2009 12:00:0
Priority: 4

Sample Type:

Sample ID, Lab ID,Desc & matrix		ETAI	PREP		SVOC			VOC
		M_ICPM_S01	_BOX_SAMPL	MOISTURE03	PAH_S01	SV_EXT_S01	TPHC10_S01	BTEX_S01
1797903	09ENME0038575-1 - MW-8/QS-1A	1	1	1	1	1	1	1
Total		**1**	**1**	**1**	**1**	**1**	**1**	**1**

Logged in by: **MCASSIDY**

	coc required	coc Delivered
Micro	☐	☐
Metals	☐	☐
Voc	☐	☐
Svoc EXT-W	☐	☐
Svoc EXT-S	☐	☐
Waters	☐	☐

☐ **QC Split Required**

Prepared By:_____
Date:_____

Sample Receipt Advice

LabMark
ENVIRONMENTAL LABORATORIES

Customer Service - 1300 552 389

Client Name:	OTEK AUSTRALIA PTY LTD	**Date Received:**	28 October 2009
Attention:	Vic Reception	**Due Date:**	5 November 2009
Client Reference number:	3106004/1001 4B Remediation	**Turnaround:**	Standard

Laboratory Reference Number:	09ENME0038575	**Your Laboratory Contact:**	Ruth Callander +61 3 9538 2277

If you have any queries regarding turnaround and sample progress, technical queries or wish to make changes please contact the laboratory immediately.

Job Information

Sample Integrity	
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No
Custody Seals Intact (if used)	N/A

Analysis Requested

Analysis Requested	Method Code	Number Of Samples
BTEX &(C6-C9) in Soil by P&T	1100	1
Total Metals in Soil By ICP/MS	3100	1
Moisture Content	5000	1
PAH in Soil by GC	2100	1
TPH (C10 - C36) in Soil by GC	2000	1

Note

- Turn Around Time starts when samples are received at the Laboratory
- For samples received after 4pm, Turn Around Time starts the next working day
- For samples received on the last day of holding time, notification of testing requirements must be given at least 6 hours prior to the sample receipt deadlines; Should the laboratory not receive the information in the required timeframe a suitably qualified results may still be reported.
- Surcharges may apply for 24, 48 and 72 hour turnaround.
- Water samples will be discarded after 4 weeks unless notified.
- Soil samples are chilled for 1 month and will be discarded after 3 months unless notified.
- Samples submitted for Micro analysis on a Friday may incur a $150 surcharge and / or be analysed outside holding time (24 Hour Holding Time).
- The Quoted Due Date does not apply to sub-contracted tests or some in-house tests. Contact your Customer Support Officer for details
  NOTE: Unless advised otherwise - Sample analysis will commence regardless of integrity issues and / or non-conformance and these will be recorded on the final report.

Logged in by : Michael Cassidy

Date : Thu 29 October 2009

Labmark 1868 Dandenong Rd Clayton VIC Australia 3168
30 008 127 802 Telephone: (03) 9538 2277 Facsimile: (03) 9538 2278

Ref (2)

COC NUMBER: 0102

LAB Labmark Page 1 of 1
ADDRESS
LAB CONTACT Dandenong Rd. Clayton
PHONE

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
kbeghie@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT #	PROJECT NAME
3106004/1001	4B Remediation

COLLECTORS NAME	LAB JOB #
Kayna	

PRELIM. RESULTS BY: 1 WEEK ☐ VERBAL ☐ FAX ☐ EMAIL

FINAL REPORT BY: 1 WEEK

LAB QUOTE REF: National Agreement

OTEK PO No.: 0772

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX (Soil / Water / Sludge / Air)	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: TPH	PAH	BTEX	Lead (Pb)	REMARKS
DISCRETE SAMPLE REQUEST:														
MW-8/QS-1A	-		S	✓				26/10/09	1	X	X	X	X	

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Kayna Beghie (Signature)

Date 27/10/09

Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by: Mustafa	Date	Time	Received by: K Jolly.	Date 28/10/09	Time 2.35pm
Relinquished by: 28/10/09	Date	Time 2.35pm.	Received by:	Date	Time

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

Additional Comments:

Please provide electronic results in ESDAT format

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SAMPLE RECEIVAL CHECKLIST

	Yes	No
1. Is there a Chain of Custody with the samples?	☑	☐
2. Are the correct number of samples present as listed on the COC?	☑	☐
3. Are the correct matrix types present?	☑	☐
4. Are samples compliant in regards to headspace present?	☑	☐
5. Where applicable, do all the samples have the correct preservative?	☑	☐
6. Do the delivered samples match the client reference number and sample ID's listed on the COC?	☑	☐
7. Is there sufficient sample for the requested testing to be performed?	☑	☐
8. Are samples within Holding time?	☑	☐

NOTE: If the answer is 'NO' for any of the above, then it should be reported immediately to the Customer Service Manager, or in their absence, to their designated delegate.

---

9. Are there any Dust samples?	☐	☑
• If so, does the client require the bottles to be returned?	☐	☐
10. Is a screening sample required?	☐	☑
11. Are any samples for microbiological testing present?	☐	☑
• If so, have the Microbiological department been advised?	☐	☐
12. Are there any URGENT samples present?	☐	☑
• If so, has the relevant section been advised?	☐	☐
13. Has a Bottle map for the samples been completed?	☐	☑

COMMENTS:

NAME: Michael Cassidy (PLEASE PRINT NAME)

DATE: 29/10/09

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Accreditation Number: 1645

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ENVIRONMENTAL LABORATORIES

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: Tom Santwyk-Anderson

Project	**09ENME0044068**
Client Reference	3106004/1001
	Area 4 GME
Order Number	0780
Received Date	30/11/2009 12:00:00 AM

Customer Sample ID	**A1/QS-1A**
Sample Matrix	**WATER**
Labmark Sample No.	**1847008**
Date Sampled	**25/11/2009**

VOC

Test/Reference	PQL	Unit	
1300 VOCs in Water by P&T			
Pentafluorobenzene-Surrogate	1	%	79
Toluene-D8 - Surrogate	1	%	77
4-Bromofluorobenzene - Surrogate	1	%	87
Dichlorodifluoromethane	5	µg/L	<5.0
Chloromethane	5	µg/L	<5.0
Vinyl chloride	5	µg/L	<5.0
Bromomethane	5	µg/L	<5.0
Chloroethane	5	µg/L	<5.0
Trichlorofluoromethane	5	µg/L	<5.0
1,1-Dichloroethene	5	µg/L	<5.0
Methylene Chloride	10	µg/L	<10.0
trans-1,2-Dichloroethene	5	µg/L	<5.0
1,1-Dichloroethane	30	µg/L	<30.0
2-butanone	50	µg/L	<50.0
cis-1,2-Dichloroethene	5	µg/L	<5.0
Bromochloromethane	5	µg/L	<5.0
Chloroform	10	µg/L	<10.0
2,2-Dichloropropane	30	µg/L	<30.0
1,2-Dichloroethane	5	µg/L	<5.0
1,1,1-Trichloroethane	5	µg/L	<5.0
1,1-Dichloropropylene	5	µg/L	<5.0
Carbon Tetrachloride	5	µg/L	<5.0
Benzene	0.5	µg/L	<0.5
Dibromomethane	5	µg/L	<5.0
1,2-Dichloropropane	5	µg/L	<5.0
Trichloroethene	5	µg/L	<5.0
Bromodichloromethane	5	µg/L	<5.0
cis-1,3-Dichloropropene	5	µg/L	<5.0
4-methyl-2-pentanone	50	µg/L	<50.0
trans-1,3-Dichloropropene	5	µg/L	<5.0
1,1,2-Trichloroethane	5	µg/L	<5.0
Toluene	1	µg/L	<1.0
1,3-Dichloropropane	5	µg/L	<5.0

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) ROD FOUNTAIN
SIGNATURE
DATE 12/2/10

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025

Accreditation Number: 1645

LabMark ENVIRONMENTAL LABORATORIES

Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: Tom Santwyk-Anderson

Project	**09ENME0044068**
Client Reference	3106004/1001
	Area 4 GME
Order Number	0780
Received Date	30/11/2009 12:00:00 AM

Customer Sample ID	**A1/QS-1A**
Sample Matrix	**WATER**
Labmark Sample No.	**1847008**
Date Sampled	**25/11/2009**

VOC

Test/Reference	PQL	Unit	
1300 VOCs in Water by P&T			
Pentafluorobenzene-Surrogate	1	%	79
Toluene-D8 - Surrogate	1	%	77
4-Bromofluorobenzene - Surrogate	1	%	87
Dichlorodifluoromethane	5	µg/L	<5.0
Chloromethane	5	µg/L	<5.0
Vinyl chloride	5	µg/L	<5.0
Bromomethane	5	µg/L	<5.0
Chloroethane	5	µg/L	<5.0
Trichlorofluoromethane	5	µg/L	<5.0
1,1-Dichloroethene	5	µg/L	<5.0
Methylene Chloride	10	µg/L	<10.0
trans-1,2-Dichloroethene	5	µg/L	<5.0
1,1-Dichloroethane	30	µg/L	<30.0
2-butanone	50	µg/L	<50.0
cis-1,2-Dichloroethene	5	µg/L	<5.0
Bromochloromethane	5	µg/L	<5.0
Chloroform	10	µg/L	<10.0
2,2-Dichloropropane	30	µg/L	<30.0
1,2-Dichloroethane	5	µg/L	<5.0
1,1,1-Trichloroethane	5	µg/L	<5.0
1,1-Dichloropropylene	5	µg/L	<5.0
Carbon Tetrachloride	5	µg/L	<5.0
Benzene	0.5	µg/L	<0.5
Dibromomethane	5	µg/L	<5.0
1,2-Dichloropropane	5	µg/L	<5.0
Trichloroethene	5	µg/L	<5.0
Bromodichloromethane	5	µg/L	<5.0
cis-1,3-Dichloropropene	5	µg/L	<5.0
4-methyl-2-pentanone	50	µg/L	<50.0
trans-1,3-Dichloropropene	5	µg/L	<5.0
1,1,2-Trichloroethane	5	µg/L	<5.0
Toluene	1	µg/L	<1.0
1,3-Dichloropropane	5	µg/L	<5.0

Customer Sample ID	**A1/QS-1A**
Sample Matrix	**WATER**
Labmark Sample No.	**1847008**
Date Sampled	**25/11/2009**

VOC

Test/Reference	PQL	Unit	
Dibromochloromethane	5	µg/L	<5.0
1,2-Dibromoethane	5	µg/L	<5.0
Tetrachloroethene	5	µg/L	<5.0
1,1,1,2-Tetrachloroethane	5	µg/L	<5.0
Chlorobenzene	5	µg/L	<5.0
Ethylbenzene	1	µg/L	<1.0
Meta- & Para- Xylene	2	µg/L	<2.0
Bromoform	5	µg/L	<5.0
Styrene	5	µg/L	<5.0
1,1,2,2-Tetrachloroethane	5	µg/L	<5.0
Ortho-Xylene	1	µg/L	<1.0
1,2,3-Trichloropropane	5	µg/L	<5.0
Isopropylbenzene	5	µg/L	<5.0
Bromobenzene	5	µg/L	<5.0
n-Propylbenzene	5	µg/L	<5.0
2-Chlorotoluene	5	µg/L	<5.0
4-Chlorotoluene	5	µg/L	<5.0
1,3,5-Trimethylbenzene	5	µg/L	<5.0
Pentachloroethane	5	µg/L	<5.0
tert-Butylbenzene	5	µg/L	<5.0
1,2,4-Trimethylbenzene	5	µg/L	<5.0
sec-Butylbenzene	5	µg/L	<5.0
1,3-Dichlorobenzene	5	µg/L	<5.0
1,4-Dichlorobenzene	5	µg/L	<5.0
p-Isopropyltoluene	5	µg/L	<5.0
1,2-Dichlorobenzene	5	µg/L	<5.0
n-Butylbenzene	5	µg/L	<5.0
1,2-Dibromo-3-chloropropane	5	µg/L	<5.0
Hexachloroethane	5	µg/L	<5.0
1,2,4-Trichlorobenzene	5	µg/L	<5.0
Naphthalene	5	µg/L	<5.0
Hexachlorobutadiene	5	µg/L	<5.0
1,2,3-Trichlorobenzene	5	µg/L	<5.0
Total Xylenes	3	µg/L	<3.0
1100 BTEX & (C6-C9) in Water by P&T			
4-Bromofluorobenzene - Surrogate	-	%	77
Benzene	0.5	µg/L	<0.5
Toluene	1	µg/L	<1.0
Ethylbenzene	1	µg/L	<1.0
Meta- & Para- Xylene	2	µg/L	<2.0
Ortho-Xylene	1	µg/L	<1.0
Total Xylenes	3	µg/L	<3.0
C6-C9 Fraction	20	µg/L	<20.0

SVOC

Test/Reference	PQL	Unit	
2100 PAH in Water by GC			
Acenaphthene	1	µg/L	<1.0
Acenaphthylene	1	µg/L	<1.0
Anthracene	1	µg/L	<1.0

Customer Sample ID	**A1/QS-1A**
Sample Matrix	**WATER**
Labmark Sample No.	**1847008**
Date Sampled	**25/11/2009**

SVOC

Test/Reference	PQL	Unit	
Benz(a)anthracene	1	µg/L	<1.0
Benzo(a)pyrene	1	µg/L	<1.0
Benzo(b)&(k)fluoranthene	2	µg/L	<2.0
Benzo(ghi)perylene	1	µg/L	<1.0
Dibenz(ah)anthracene	1	µg/L	<1.0
Chrysene	1	µg/L	<1.0
Naphthalene	1	µg/L	<1.0
Fluoranthene	1	µg/L	<1.0
Fluorene	1	µg/L	<1.0
Indeno(123-cd)pyrene	1	µg/L	<1.0
Phenanthrene	1	µg/L	<1.0
Pyrene	1	µg/L	<1.0
Sum of PAHs	1	µg/L	<1
2-Fluorobiphenyl - Surrogate	-	%	99
Anthracene-D10 - Surrogate	-	%	73
p-Terphenyl-D14 - Surrogate	-	%	87
2800 Individual Phenols in Water by GC			
2,3,4,6-Tetrachlorophenol	10	µg/L	<10
2,3,4-Trichlorophenol	10	µg/L	<10
2,3,5,6-Tetrachlorophenol	10	µg/L	<10
2,3,5-Trichlorophenol	10	µg/L	<10
2,3,6-Trichlorophenol	10	µg/L	<10
2,3-Dichlorophenol	20	µg/L	<20
2,4&2,5-Dichlorophenol	40	µg/L	<40
2,4,6-Trichlorophenol	10	µg/L	<10
2,6-Dichlorophenol	10	µg/L	<10
2-Chlorophenol	10	µg/L	<10
2-Methylphenol	10	µg/L	<10
3,4-Dichlorophenol	20	µg/L	<20
3,5-Dichlorophenol	20	µg/L	<20
3-Chlorophenol & 4-Chlorophenol	10	µg/L	<10
3-Methylphenol & 4-Methylphenol	10	µg/L	<10
4-Chloro-3-methylphenol	10	µg/L	<10
Pentachlorophenol	30	µg/L	<30
Phenol	10	µg/L	<10
2,4,6-Tribromophenol-Surrogate	-	%	81
2000 TPH (C10 - C36) in Water by GC			
C10-C14 Fraction	40	µg/L	<40
C15-C28 Fraction	100	µg/L	299
C29-C36 Fraction	100	µg/L	<100

Metals

Test/Reference	PQL	Unit	
3200 Dissolved Metals in Water - ICP/AES			
Calcium	100	µg/L	189000
Iron	100	µg/L	<100
Magnesium	100	µg/L	168000
Potassium	1000	µg/L	23600
Sodium	100	µg/L	1320000
3100 Dissolved Metals in Water By ICP/MS			

Customer Sample ID			**A1/QS-1A**
Sample Matrix			**WATER**
Labmark Sample No.			**1847008**
Date Sampled			**25/11/2009**

Metals

Test/Reference	PQL	Unit	
Antimony	5	µg/L	<5
Arsenic	5	µg/L	10
Barium	5	µg/L	370
Beryllium	5	µg/L	<5
Boron	5	µg/L	460
Cadmium	5	µg/L	<5
Chromium	5	µg/L	27
Cobalt	5	µg/L	5.7
Copper	5	µg/L	<5
Lead	5	µg/L	<5
Manganese	5	µg/L	750
Molybdenum	5	µg/L	6.3
Nickel	5	µg/L	31
Selenium	5	µg/L	42
Silver	5	µg/L	<5
Tin	5	µg/L	<5
Vanadium	5	µg/L	<5
Zinc	5	µg/L	11
3400 Dissolved Mercury in Water by FIMS			
Mercury	0.1	µg/L	<0.1

Inorganics

Test/Reference	PQL	Unit	
4550 Alkalinity in Water			
Total Alkalinity as CaCO3	20	mg/L	352
Bicarbonate as CaCO3	10	mg/L	352
Carbonate as CaCO3	10	mg/L	<10
Hydroxide as CaCO3	10	mg/L	<10
4010 Conductivity in Water			
Electrical Conductivity	20	µS/cm	7360
4000 pH in Water			
pH	0.1	pH	7.7
4110 Dissolved Solids in Water			
Total Dissolved Solids	20	mg/L	4600
4300 Anions in Water by IC			
Chloride	0.5	mg/L	2100
Bromide	0.5	mg/L	5.4
Fluoride	0.5	mg/L	0.7
Nitrate	0.5	mg/L	I03 4.0
Nitrite	0.5	mg/L	<0.5
Orthophosphate	0.5	mg/L	<0.5
Sulphate	0.5	mg/L	280

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Testing Site	Extracted	Analysed
1100 BTEX & (C6-C9) in Water by P&T	Melbourne 1645	01/12/2009	02/12/2009
1300 VOCs in Water by P&T	Melbourne 1645	01/12/2009	04/12/2009
2000 TPH (C10 - C36) in Water by GC	Melbourne 1645	02/12/2009	03/12/2009
2100 PAH in Water by GC	Melbourne 1645	02/12/2009	03/12/2009
2800 Individual Phenols in Water by GC	Melbourne 1645	02/12/2009	03/12/2009
3100 Dissolved Metals in Water By ICP/MS	Melbourne 1645	01/12/2009	02/12/2009
3200 Dissolved Metals in Water - ICP/AES	Melbourne 1645	03/12/2009	04/12/2009
3400 Dissolved Mercury in Water by FIMS	Melbourne 1645	01/12/2009	03/12/2009
4000 pH in Water	Melbourne 1645	03/12/2009	04/12/2009
4010 Conductivity in Water	Melbourne 1645	03/12/2009	04/12/2009
4110 Dissolved Solids in Water	Melbourne 1645	01/12/2009	04/12/2009
4300 Anions in Water by IC	Melbourne 1645	02/12/2009	04/12/2009
4550 Alkalinity in Water	Melbourne 1645	03/12/2009	04/12/2009

Test Description

4000 pH in Water	As noted in LM-FOR-ADM-020 pH should be tested in the field, therefore this test has been analysed in the laboratory outside Holding Times

Labmark Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Matrix spike recoveries are calculated on an 'As Received' basis; the parent sample result is moisture corrected after the % recovery is determined.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quoted PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
9. Samples were analysed on an as received basis.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE:** pH duplicates are reported as a range NOT as an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1848416 [Method Blank]							
3400 Dissolved Mercury in Water by FIMS							
Mercury	µg/L	<0.1			< 0.1	Pass	
1848821 [Method Blank]							
3100 Dissolved Metals in Water By ICP/MS							
Antimony	µg/L	<5			< 5	Pass	
Arsenic	µg/L	<5			< 5	Pass	
Barium	µg/L	<5			< 5	Pass	
Beryllium	µg/L	<5			< 5	Pass	
Boron	µg/L	<5			< 5	Pass	
Cadmium	µg/L	<5			< 5	Pass	
Chromium	µg/L	<5			< 5	Pass	
Cobalt	µg/L	<5			< 5	Pass	
Copper	µg/L	<5			< 5	Pass	
Lead	µg/L	<5			< 5	Pass	
Manganese	µg/L	<5			< 5	Pass	
Molybdenum	µg/L	<5			< 5	Pass	
Nickel	µg/L	<5			< 5	Pass	
Selenium	µg/L	<5			< 5	Pass	
Tin	µg/L	<5			< 5	Pass	
Vanadium	µg/L	<5			< 5	Pass	
Zinc	µg/L	<5			< 5	Pass	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1852354 [Method Blank]							
3200 Dissolved Metals in Water - ICP/AES							
Calcium	µg/L	<100			< 100	Pass	
Iron	µg/L	<100			< 100	Pass	
Magnesium	µg/L	<100			< 100	Pass	
Potassium	µg/L	<1000			< 1000	Pass	
Sodium	µg/L	<100			< 100	Pass	
1848417 [Laboratory Control Sample]							
3400 Dissolved Mercury in Water by FIMS			Expected Value	Percent Recovery			
Mercury	µg/L	10	10.0	101	80-120 %	Pass	
1848822 [Laboratory Control Sample]							
3100 Dissolved Metals in Water By ICP/MS			Expected Value	Percent Recovery			
Antimony	µg/L	110	100.0	106	80-120 %	Pass	
Arsenic	µg/L	100	100.0	101	80-120 %	Pass	
Barium	µg/L	110	100.0	105	80-120 %	Pass	
Beryllium	µg/L	100	100.0	100	80-120 %	Pass	
Boron	µg/L	100	100.0	100	80-120 %	Pass	
Cadmium	µg/L	110	100.0	105	80-120 %	Pass	
Chromium	µg/L	100	100.0	101	80-120 %	Pass	
Cobalt	µg/L	99	100.0	99	80-120 %	Pass	
Copper	µg/L	100	100.0	101	80-120 %	Pass	
Lead	µg/L	110	100.0	106	80-120 %	Pass	
Manganese	µg/L	98	100.0	98	80-120 %	Pass	
Molybdenum	µg/L	100	100.0	105	80-120 %	Pass	
Nickel	µg/L	100	100.0	100	80-120 %	Pass	
Selenium	µg/L	100	100.0	104	80-120 %	Pass	
Tin	µg/L	110	100.0	108	80-120 %	Pass	
Vanadium	µg/L	99	100.0	99	80-120 %	Pass	
Zinc	µg/L	100	100.0	101	80-120 %	Pass	
1852355 [Laboratory Control Sample]							
3200 Dissolved Metals in Water - ICP/AES			Expected Value	Percent Recovery			
Calcium	µg/L	10900	10000.0	109	80-120 %	Pass	
Iron	µg/L	11000	10000.0	108	80-120 %	Pass	
Magnesium	µg/L	11100	10000.0	111	80-120 %	Pass	
Potassium	µg/L	10700	10000.0	107	80-120 %	Pass	
Sodium	µg/L	10800	10000.0	108	80-120 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1848090 [Method Blank]							
2000 TPH (C10 - C36) in Water by GC							
C10-C14 Fraction	µg/L	<40			< 40	Pass	
C15-C28 Fraction	µg/L	<100			< 100	Pass	
C29-C36 Fraction	µg/L	<100			< 100	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1848092 [Method Blank]							
2100 PAH in Water by GC							
Acenaphthene	µg/L	<1.0			< 1	Pass	
Acenaphthylene	µg/L	<1.0			< 1	Pass	
Anthracene	µg/L	<1.0			< 1	Pass	
Benz(a)anthracene	µg/L	<1.0			< 1	Pass	
Benzo(a)pyrene	µg/L	<1.0			< 1	Pass	
Benzo(b)&(k)fluoranthene	µg/L	<2.0			< 2	Pass	
Benzo(ghi)perylene	µg/L	<1.0			< 1	Pass	
Chrysene	µg/L	<1.0			< 1	Pass	
Dibenz(ah)anthracene	µg/L	<1.0			< 1	Pass	
Fluoranthene	µg/L	<1.0			< 1	Pass	
Fluorene	µg/L	<1.0			< 1	Pass	
Indeno(123-cd)pyrene	µg/L	<1.0			< 1	Pass	
Naphthalene	µg/L	<1.0			< 1	Pass	
Phenanthrene	µg/L	<1.0			< 1	Pass	
Pyrene	µg/L	<1.0			< 1	Pass	
Sum of PAHs	µg/L	<1.0			< 1	Pass	
2-Fluorobiphenyl - Surrogate	%	97			70-130 %	Pass	
Anthracene-D10 - Surrogate	%	88			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	89			70-130 %	Pass	
2800 Individual Phenols in Water by GC							
2,3,4,6-Tetrachlorophenol	µg/L	<10			< 10	Pass	
2,3,4-Trichlorophenol	µg/L	<10			< 10	Pass	
2,3,5,6-Tetrachlorophenol	µg/L	<10			< 10	Pass	
2,3,5-Trichlorophenol	µg/L	<10			< 10	Pass	
2,3,6-Trichlorophenol	µg/L	<10			< 10	Pass	
2,3-Dichlorophenol	µg/L	<20			< 20	Pass	
2,4&2,5-Dichlorophenol	µg/L	<40			< 40	Pass	
2,4,6-Trichlorophenol	µg/L	<10			< 10	Pass	
2,6-Dichlorophenol	µg/L	<10			< 10	Pass	
2-Chlorophenol	µg/L	<10			< 10	Pass	
2-Methylphenol	µg/L	<10			< 10	Pass	
3,4-Dichlorophenol	µg/L	<20			< 20	Pass	
3,5-Dichlorophenol	µg/L	<20			< 20	Pass	
3-Chlorophenol & 4-Chlorophenol	µg/L	<10			< 10	Pass	
3-Methylphenol & 4-Methylphenol	µg/L	<10			< 10	Pass	
4-Chloro-3-methylphenol	µg/L	<10			< 10	Pass	
Pentachlorophenol	µg/L	<30			< 30	Pass	
Phenol	µg/L	<10			< 10	Pass	
2,4,6-Tribromophenol-Surrogate	%	65			50-130 %	Pass	
1848091 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Water by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	µg/L	150	200.0	74	70-130 %	Pass	
C15-C28 Fraction	µg/L	221	200.0	111	70-130 %	Pass	
C29-C36 Fraction	µg/L	197	200.0	98	70-130 %	Pass	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1848093 [Laboratory Control Sample]							
2100 PAH in Water by GC			Expected Value	Percent Recovery			
Acenaphthene	µg/L	3.6	4.0	90	70-130 %	Pass	
Acenaphthylene	µg/L	3.9	4.0	97	70-130 %	Pass	
Anthracene	µg/L	3.5	4.0	88	70-130 %	Pass	
Benz(a)anthracene	µg/L	3.7	4.0	92	70-130 %	Pass	
Benzo(a)pyrene	µg/L	3.8	4.0	96	70-130 %	Pass	
Benzo(b)&(k)fluoranthene	µg/L	7.5	8.0	93	70-130 %	Pass	
Benzo(ghi)perylene	µg/L	3.9	4.0	96	70-130 %	Pass	
Chrysene	µg/L	3.7	4.0	94	70-130 %	Pass	
Dibenz(ah)anthracene	µg/L	3.9	4.0	97	70-130 %	Pass	
Fluoranthene	µg/L	3.8	4.0	95	70-130 %	Pass	
Fluorene	µg/L	3.6	4.0	91	70-130 %	Pass	
Indeno(123-cd)pyrene	µg/L	3.8	4.0	95	70-130 %	Pass	
Naphthalene	µg/L	4.0	4.0	99	70-130 %	Pass	
Phenanthrene	µg/L	3.6	4.0	91	70-130 %	Pass	
Pyrene	µg/L	3.8	4.0	94	70-130 %	Pass	
Sum of PAHs	µg/L	60	64.0	94	70-130 %	Pass	
2-Fluorobiphenyl - Surrogate	%	103			70-130 %	Pass	
Anthracene-D10 - Surrogate	%	97			70-130 %	Pass	
p-Terphenyl-D14 - Surrogate	%	93			70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847317 [Method Blank]							
1100 MAH(BTEX & C6-C9) in Water P&T							
Benzene	µg/L	<0.5			< 0.5	Pass	
C6-C9 Fraction	µg/L	<20.0			< 20	Pass	
Ethylbenzene	µg/L	<1.0			< 1	Pass	
Meta- & Para- Xylene	µg/L	<2.0			< 2	Pass	
Ortho-Xylene	µg/L	<1.0			< 1	Pass	
Toluene	µg/L	<1.0			< 1	Pass	
Total Xylenes	µg/L	<3.0			< 3	Pass	
4-Bromofluorobenzene - Surrogate	%	85			70-130 %	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847351 [Method Blank]							
1300 VOCs in Water by P&T							
1,1,1,2-Tetrachloroethane	µg/L	<5.0			< 5	Pass	
1,1,1-Trichloroethane	µg/L	<5.0			< 5	Pass	
1,1,2,2-Tetrachloroethane	µg/L	<5.0			< 5	Pass	
1,1,2-Trichloroethane	µg/L	<5.0			< 5	Pass	
1,1-Dichloroethane	µg/L	<30.0			< 30	Pass	
1,1-Dichloroethene	µg/L	<5.0			< 5	Pass	
1,1-Dichloropropylene	µg/L	<5.0			< 5	Pass	
1,2,3-Trichlorobenzene	µg/L	<5.0			< 5	Pass	
1,2,3-Trichloropropane	µg/L	<5.0			< 5	Pass	
1,2,4-Trichlorobenzene	µg/L	<5.0			< 5	Pass	
1,2,4-Trimethylbenzene	µg/L	<5.0			< 5	Pass	
1,2-Dibromo-3-chloropropane	µg/L	<5.0			< 5	Pass	
1,2-Dibromoethane	µg/L	<5.0			< 5	Pass	
1,2-Dichlorobenzene	µg/L	<5.0			< 5	Pass	
1,2-Dichloroethane	µg/L	<5.0			< 5	Pass	
1,2-Dichloropropane	µg/L	<5.0			< 5	Pass	
1,3,5-Trimethylbenzene	µg/L	<5.0			< 5	Pass	
1,3-Dichlorobenzene	µg/L	<5.0			< 5	Pass	
1,3-Dichloropropane	µg/L	<5.0			< 5	Pass	
1,4-Dichlorobenzene	µg/L	<5.0			< 5	Pass	
2,2-Dichloropropane	µg/L	<30.0			< 30	Pass	
2-butanone	µg/L	<50.0			< 50	Pass	
2-Chlorotoluene	µg/L	<5.0			< 5	Pass	
4-Chlorotoluene	µg/L	<5.0			< 5	Pass	
4-methyl-2-pentanone	µg/L	<50.0			< 50	Pass	
Benzene	µg/L	<0.5			< 0.5	Pass	
Bromobenzene	µg/L	<5.0			< 5	Pass	
Bromochloromethane	µg/L	<5.0			< 5	Pass	
Bromodichloromethane	µg/L	<5.0			< 5	Pass	
Bromoform	µg/L	<5.0			< 5	Pass	
Bromomethane	µg/L	<5.0			< 5	Pass	
Carbon Tetrachloride	µg/L	<5.0			< 5	Pass	
Chlorobenzene	µg/L	<5.0			< 5	Pass	
Chloroethane	µg/L	<5.0			< 5	Pass	
Chloromethane	µg/L	<5.0			< 5	Pass	
cis-1,2-Dichloroethene	µg/L	<5.0			< 5	Pass	
cis-1,3-Dichloropropene	µg/L	<5.0			< 5	Pass	
Dibromochloromethane	µg/L	<5.0			< 5	Pass	
Dibromomethane	µg/L	<5.0			< 5	Pass	
Dichlorodifluoromethane	µg/L	<5.0			< 5	Pass	
Ethylbenzene	µg/L	<1.0			< 1	Pass	
Hexachlorobutadiene	µg/L	<5.0			< 5	Pass	
Hexachloroethane	µg/L	<5.0			< 5	Pass	
Isopropylbenzene	µg/L	<5.0			< 5	Pass	
Meta- & Para- Xylene	µg/L	<2.0			< 2	Pass	
Methylene Chloride	µg/L	<10.0			< 10	Pass	
Naphthalene	µg/L	<5.0			< 5	Pass	
n-Butylbenzene	µg/L	<5.0			< 5	Pass	
n-Propylbenzene	µg/L	<5.0			< 5	Pass	
Ortho-Xylene	µg/L	<1.0			< 1	Pass	
Pentachloroethane	µg/L	<5.0			< 5	Pass	
p-Isopropyltoluene	µg/L	<5.0			< 5	Pass	
sec-Butylbenzene	µg/L	<5.0			< 5	Pass	
Styrene	µg/L	<5.0			< 5	Pass	
tert-Butylbenzene	µg/L	<5.0			< 5	Pass	
Tetrachloroethene	µg/L	<5.0			< 5	Pass	
Toluene	µg/L	<1.0			< 1	Pass	
Total Xylenes	µg/L	<3.0			< 3	Pass	
trans-1,2-Dichloroethene	µg/L	<5.0			< 5	Pass	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847351 [Method Blank]							
1300 VOCs in Water by P&T							
trans-1,3-Dichloropropene	µg/L	<5.0			< 5	Pass	
Trichloroethene	µg/L	<5.0			< 5	Pass	
Trichlorofluoromethane	µg/L	<5.0			< 5	Pass	
Vinyl chloride	µg/L	<5.0			< 5	Pass	
1847319 [Laboratory Control Sample]							
1100 MAH(BTEX & C6-C9) in Water P&T			Expected Value	Percent Recovery			
Benzene	µg/L	7.0	10.0	70	70-130 %	Pass	
C6-C9 Fraction	µg/L	100	140.0	73	70-130 %	Pass	
Ethylbenzene	µg/L	7.7	10.0	77	70-130 %	Pass	
Meta- & Para- Xylene	µg/L	17	20.0	84	70-130 %	Pass	
Ortho-Xylene	µg/L	9.9	10.0	99	70-130 %	Pass	
Toluene	µg/L	8.6	10.0	86	70-130 %	Pass	
Total Xylenes	µg/L	27	30.0	89	70-130 %	Pass	
4-Bromofluorobenzene - Surrogate	%	86			70-130 %	Pass	
1847352 [Laboratory Control Sample]							
1300 VOCs in Water by P&T			Expected Value	Percent Recovery			
1,1,1-Trichloroethane	µg/L	120	25.0	84	70-130 %	Pass	
1,1,2,2-Tetrachloroethane	µg/L	110	25.0	114	70-130 %	Pass	
1,1,2-Trichloroethane	µg/L	120	25.0	155	70-130 %	Fail	
1,1-Dichloroethane	µg/L	120	25.0	85	70-130 %	Pass	
1,1-Dichloroethene	µg/L	95	25.0	50	70-130 %	Fail	
1,2-Dichlorobenzene	µg/L	120	25.0	123	70-130 %	Pass	
1,2-Dichloroethane	µg/L	130	25.0	130	70-130 %	Pass	
1,2-Dichloropropane	µg/L	120	25.0	95	70-130 %	Pass	
1,3-Dichlorobenzene	µg/L	120	25.0	103	70-130 %	Pass	
1,4-Dichlorobenzene	µg/L	120	25.0	123	70-130 %	Pass	
Benzene	µg/L	120	25.0	97	70-130 %	Pass	
Bromodichloromethane	µg/L	130	25.0	108	70-130 %	Pass	
Bromoform	µg/L	110	25.0	120	70-130 %	Pass	
Carbon Tetrachloride	µg/L	110	25.0	68	70-130 %	Fail	Q13
Chlorobenzene	µg/L	120	25.0	105	70-130 %	Pass	
Chloroform	µg/L	120	25.0	117	70-130 %	Pass	
cis-1,3-Dichloropropene	µg/L	100	25.0	129	70-130 %	Pass	
Dibromochloromethane	µg/L	120	25.0	123	70-130 %	Pass	
Ethylbenzene	µg/L	120	25.0	86	70-130 %	Pass	
Methylene Chloride	µg/L	110	25.0	81	70-130 %	Pass	
Tetrachloroethene	µg/L	82	25.0	68	70-130 %	Fail	
Toluene	µg/L	120	25.0	105	70-130 %	Pass	
trans-1,2-Dichloroethene	µg/L	100	25.0	61	70-130 %	Fail	
trans-1,3-Dichloropropene	µg/L	110	25.0	98	70-130 %	Pass	
Trichloroethene	µg/L	130	25.0	92	70-130 %	Pass	

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847608 [Method Blank]							
4110 Dissolved Solids in Water							
Total Dissolved Solids	mg/L	<20			< 20	Pass	
1849574 [Method Blank]							
4300 Anions in Water by IC							
Bromide	mg/L	<0.5			< 0.5	Pass	
Chloride	mg/L	<0.5			< 0.5	Pass	
Fluoride	mg/L	<0.5			< 0.5	Pass	
Nitrate	mg/L	<0.5			< 0.5	Pass	
Nitrite	mg/L	<0.5			< 0.5	Pass	
Orthophosphate	mg/L	<0.5			< 0.5	Pass	
Sulphate	mg/L	<0.5			< 0.5	Pass	

Laboratory: **EN_WATERS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1847609 [Laboratory Control Sample]							
4110 Dissolved Solids in Water			Expected Value	Percent Recovery			
Total Dissolved Solids	mg/L	920	1000.0	92	90-110 %	Pass	
1849575 [Laboratory Control Sample]							
4300 Anions in Water by IC			Expected Value	Percent Recovery			
Bromide	mg/L	100	100.0	104	80-120 %	Pass	
Chloride	mg/L	100	100.0	100	80-120 %	Pass	
Fluoride	mg/L	97	100.0	97	80-120 %	Pass	
Nitrate	mg/L	120	100.0	116	80-120 %	Pass	
Nitrite	mg/L	90	100.0	90	80-120 %	Pass	
Orthophosphate	mg/L	99	100.0	99	80-120 %	Pass	
Sulphate	mg/L	110	100.0	109	80-120 %	Pass	
1851759 [Laboratory Control Sample]							
4010 Conductivity in Water			Expected Value	Percent Recovery			
Electrical Conductivity	µS/cm	1410	1413.0	100	95-105 %	Pass	
1851761 [Laboratory Control Sample]							
4000 pH in Water			Expected Value	Percent Recovery			
pH	pH	7.4	7.4	100	95-105 %	Pass	
1851810 [Laboratory Control Sample]							
4550 Alkalinity in Water			Expected Value	Percent Recovery			
Carbonate as CaCO3	mg/L	1010	1000.0	101	90-110 %	Pass	
Total Alkalinity as CaCO3	mg/L	961	1000.0	96	90-110 %	Pass	

Sample Integrity

Custody Seals Intact (if used)	Yes
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
I03	This sample was not received in a suitable timeframe to allow completion within the recommended holding time
Q13	Some elements for this test have failed in the QC sample. However when at least 80% have passed the QC can be released. For any failed elements; positive results in blind samples can only be used as a guide. All other QC has passed in this test batch.

Authorised By

Grace Anderson	Client Services Officer	
Alex Petridis	Senior Analyst - SVOC	Accreditation Number: 1645
Barry Blythman	Senior Analyst - VOC	Accreditation Number: 1645
Mark Herbstreit	Senior Analyst - Metals	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Patricia Hua	Senior Analyst	Accreditation Number: 1645

Laboratory Manager

David Elliott — Laboratory Manager - Melbourne

Final Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Laboratory staff.

PROJECT: 09ENME0044068

Client: OTEK AUSTRALIA PTY LTD

Contact: Gurdeep Khosa
Ph: **Fax:**
Debtor Code: 174910
Contract Number: 4896
Quarantine Samp: No

Due Date:	7/12/2009 3:00:00PM
Order Number:	0780
Project Reference:	3106004/1001
Lab Contact:	RCALLANDER

Date Received: 30/11/2009 12:00:0
Priority: 4

Sample Type:

Sample ID, Lab ID,Desc & matrix		METALS			'REI	SVOC				VOC		WATERS				
		M_FIMS_W01	M_ICPA_W01	M_ICPM_W01	_BOX_SAMPL	PAH_W01	PHENOL_W01	SV_EXT_W01	TPHC10_W01	BTEX_W01	VOC_W01	ALK_WAT07	ANIONS_W01	EC_W01	PH_W01	SOL_DIS_W1
1847008	09ENME0044068-1 - A1/QS-1A -	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Total		**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1**

Logged in by: **MCASSIDY**

	coc required	coc Delivered
Micro	☐	☐
Metals	☐	☐
Voc	☐	☐
Svoc EXT-W	☐	☐
Svoc EXT-S	☐	☐
Waters	☐	☐

☐ **QC Split Required**

Prepared By:_____
Date:_____

Sample Receipt Advice

LabMark
ENVIRONMENTAL LABORATORIES

Customer Service - 1300 052 262

Client Name:	OTEK AUSTRALIA PTY LTD	**Date Received:**	30 November 2009
Attention:	Tom Santwyk-Anderson	**Due Date:**	7 December 2009
Client Reference number:	3106004/1001 Area 4 GME	**Turnaround:**	Standard

Laboratory Reference Number:	09ENME0044068	**Your Laboratory Contact:**	Ruth Callander +61 3 9265 9300

If you have any queries regarding turnaround and sample progress, technical queries or wish to make changes please contact the laboratory immediately.

Job Information

Sample Integrity	
Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No
Custody Seals Intact (if used)	Yes

Analysis Requested

Analysis Requested	Method Code	Number Of Samples
Alkalinity in Water	4550	1
Anions in Water by IC	4300	1
BTEX & (C6-C9) in Water by P&T	1100	1
Conductivity in Water	4010	1
Dissolved Mercury in Water by FIMS	3400	1
Dissolved Metals in Water - ICP/AES	3200	1
Dissolved Metals in Water By ICP/MS	3100	1
PAH in Water by GC	2100	1
pH in Water	4000	1
Individual Phenols in Water by GC	2800	1
Dissolved Solids in Water	4110	1
TPH (C10 - C36) in Water by GC	2000	1
VOCs in Water by P&T	1300	1

Note

- Turn Around Time starts when samples are received at the Laboratory
- For samples received after 4pm, Turn Around Time starts the next working day
- For samples received on the last day of holding time, notification of testing requirements must be given at least 6 hours prior to the sample receipt deadlines; Should the laboratory not receive the information in the required timeframe a suitably qualified results may still be reported.
- Surcharges may apply for 24 , 48 and 72 hour turnaround.
- Water samples will be discarded after 4 weeks unless notified.
- Soil samples are chilled for 1 month and will be discarded after 3 months unless notified.
- Samples submitted for Micro analysis on a Friday may incur a $150 surcharge and / or be analysed outside holding time (24 Hour Holding Time).
- The Quoted Due Date does not apply to sub-contracted tests or some in-house tests. Contact your Customer Support Officer for details
  NOTE: Unless advised otherwise - Sample analysis will commence regardless of integrity issues and / or non-conformance and these will be recorded on the final report.

Logged in by : Michael Cassidy

Date : Mon 30 November 2009

Ref (6)

COC NUMBER: 0105

LAB Labmark
ADDRESS Dandenong Rd Clayton
LAB CONTACT
PHONE

Page 1 of 1

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to vicreception@otek.com.au & gkhosa @otek.com.au kbeglie

OTEK AUSTRALIA PTY LTD

PROJECT # 31060041/1001

PROJECT NAME Area 4 GME

COLLECTORS NAME Kaye

LAB JOB #

PRELIM. RESULTS BY: ☐ VERBAL ☐ FAX ☒ EMAIL

FINAL REPORT BY: 1 week

LAB QUOTE REF: National Agreement

OTEK PO No.: 0780

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX	PRESERVATION METHOD				SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE												REMARKS
			Soil / Water / Sludge / Air	ICE	ACIDIFIED	OTHER	NONE			Metals (M19)	BTEX, TPH, DAH	TDS, EC, pH	Nitrate, Nitrite	Alkalinity, Sulphate	Total Anions, Total Cations	Chloride	Ca, Mg, Na, K	VOC's, Phenols				
DISCRETE SAMPLE REQUEST:																						
A1/QS-1A			W	X	X			25/11/09	5	X	X	X	X	X	X	X	X	X				PLEASE FORWARD TO LABMARK

DEENME00440GB-1(1847008)
OTEK...ML1B(A1/QS-1A)

Investigator: I attest that the proper field sampling procedures were used during the collection of these samples

Sampler Name: (Print) Kaye Beglie (Signature)

Date 27/11/09

Relinquished by:	Date	Time	Received by:	Date	Time	
Kaye B	27/11	14.40	438	3.15PM 27/11		Custody Seals Intact? Yes / No / NA
Relinquished by:	Date	Time	Received by:	Date	Time	
438	4pm		Michael Cassidy	30/4/09	15:55	Samples Received Chilled? Yes / No
Relinquished by:	Date	Time	Received by:	Date	Time	

Additional Comments:

Please provide electronic results in ESDAT format

LABMARK ENVIRONMENTAL LABORATORIES

SAMPLE RECEIVAL CHECKLIST

	Yes	No
1. Is there a Chain of Custody with the samples?	☑	☐
2. Are the correct number of samples present as listed on the COC?	☑	☐
3. Are the correct matrix types present?	☑	☐
4. Are samples compliant in regards to headspace present?	☑	☐
5. Where applicable, do all the samples have the correct preservative?	☑	☐
6. Do the delivered samples match the client reference number and sample ID's listed on the COC?	☑	☐
7. Is there sufficient sample for the requested testing to be performed?	☑	☐
8. Do we have a grace period of at least 36 hours before samples are Outside of holding time?	☑	☐

NOTE: If the answer is 'NO' for any of the above, then it should be reported immediately to the Customer Service Manager, or in their absence, to their designated delegate.

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9. Are there any Dust samples?	☐	☑
‹ If so, does the client require the bottles to be returned?	☐	☐
10. Is a screening sample required?	☑	☐
11. Are any samples for microbiological testing present?	☐	☑
‹ If so, have the Microbiological department been advised?	☐	☐
12. Are there any URGENT samples present?	☐	☑
‹ If so, has the relevant section been advised?	☐	☐
13. Has a Bottle map for the samples been completed?	☑	☐

COMMENTS:

NAME: Michael Cassidy (PLEASE PRINT NAME) DATE: 30/11/09

Appendix J

Soil Analytical Summaries

Appendix J - Table 1
Metal Analysis
Sub-Area 4A ESA - Analytical Summary
Melbourne Water, Werribee, Victoria

	Heavy Metals																		
Primaries	**ALL**	**As**	**Cr**	**Cu**	**Zn**	**Mn**	**V**	**Ni**	**Ba**	**Hg**	**Sb**	**Be**	**B**	**Cd**	**Co**	**Pb**	**Mo**	**Se**	**Sn**
Grid	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
Target	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
Soil Bore	17	12	12	12	12	12	12	12	12	12	12	12	12	12	12	17	12	12	12
Validation	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
Total - Primaries	74	69	69	69	69	69	69	69	69	69	69	69	69	69	69	74	69	69	69
Composite	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
Total - Primaries & Composites	115	110	110	110	110	110	110	110	110	110	110	110	110	110	110	115	110	110	110
QA/QC - Dups & trips counted separately	11	9	9	9	9	9	9	9	9	9	7	9	7	9	9	11	7	7	7
Blanks	13	13	13	13	12	12	12	12	12	12	7	12	7	12	12	12	7	7	7
EIL exceedances - Primaries	14					7 (Soil bores)	1 (Soil bore)	2 (Soil bores)	4(1T, 2G, 1V)										
EIL exceedances - Composites	142	6				41	41	38	16										
EIL exceedances - Total	156	6				48	42	40	20										
HIL-A exceedances - Primaries																			
HIL-A exceedances - Composites																			
HIL-A exceedances - Total																			
Maximum Exceedance (mg/kg)						900	51	150	1530										
Max Exceedance Sample Name						4A/B-8/10.0	4A/B-8/9.0	4A/B-8/10.0	4A/VS-2										
Maximum Composite Exceedance		14				464	60	55	330										
Max Exceedance Sample Name		4A/C26				4A/C4	4A/C11	4A/C38	4A/C10										

Appendix J - Table 2
Non-Metal Analysis
Sub-Area 4A ESA - Analytical Summary
Melbourne Water, Werribee, Victoria

Primaries	ALL*	EPAV Screen	TPH (C10-36)	TPH (C6-9)	BTEX	PAH	OCP	OPP	PCB	Phenols	pH	Asbestos	Ammonia	Nitrate	Nitrite	Flouride	Cyanide	E.Coli	Coliform	Sulphate	Phthalates	Phenoxy Herbicides
Grid	62	2	42	42		43	40	31			29	30										
Target	22	2	2			4	4	4	2	4	20	7	16	16	4	6	2	16			4	2
Soil Bores	17	1	14	14	4	14	10	10	10	10											10	10
Validation	11		4	4		2	4				4	4	2	4	4			6	4	2		
Total - Primaries	112	5	62	60	4	63	58	45	12	14	53	41	18	20	8	6	2	22	4	2	14	12
Composite	43					24	12	12			12											
Total - Primaries & Composites	155	5	62	60		87	70	57		14	65	41	18	20	8	6	2	22	4	2	14	12
QA/QC	13		7	7	2	6	3	2			3		2							1		
Blanks	20		5			2																
EIL exceedances - Primaries	14																					
EIL exceedances - Composites	142																					
EIL exceedances - Total	156																					
HIL-A exceedances - Primaries																						
HIL-A exceedances - Composites																						
HIL-A exceedances - Total																						
Maximum Exceedance																						
Max Exceedance Sample Name																						
Maximum Composite Exceedance																						
Max Exceedance Sample Name																						

Note: * Includes metals totals
pH have no EIL/HIL criteria but do have ANZECC background ranges with exceedences (9T, 6C)

Appendix J - Table 3
Soil Analytical Summary
Sub-Area 4A ESA - Summary of QA/QC Samples
Melbourne Water, Werribee, Victoria

Quality Sample Identification	Quality Sample Duplicate Identification	Quality Sample Triplicate Identification
Sampled Pre April 2008		
4A/G28/0.25	4A/QS-3	4A/QS-3A
4A/G11/0.25	4A/QS-4	4A/QS-4A
4A/G16/0.25	4A/QS-5	4A/QS-5A
Sampled Post April 2008		
4A/T1B/0.5	4A/QS-12	4A/QS-12A
4A/T5/VS-5	4A/VS/QS-1	-
4A/VS-3	4A/VS/QS-2	-
4A/B-8/12.0	4A/B-8/QS-1	-
MW-8/3.0	MW-8/QS-1	MW-8/QS-1A

Note: Sample highlighted yellow was taken from MW-7 location and has been incorrectly labelled due to an oversight by OTEK

Appendix J - Table 4

ESA Grid

Sub-Area 4A ESA - Summary of Adequacy of Field Duplicate Soil Samples

Melbourne Water, Werribee, Victoria

Parameters	Number of Samples			≥1 in 20 Dups (i.e. >5%)	≥1 in 20 Trips (i.e. >5%)
	No. Primary	No. Dups	No. Trips		
Heavy Metals	37	2	2	Yes	Yes
TPH (C6-9)	42	2	2	No	No
TPH (C10-36)	42	2	2	No	No
PAH	43	2	2	No	No
OCP	40	1	1	No	No
OPP	31	1	1	No	No
pH	29	1	1	No	No
Asbestos	30	-	-	No	No
EPAV Screen	2	-	-	No	No

Appendix J - Table 5

ESA Target

Sub-Area 4A ESA - Summary of Adequacy of Field Duplicate Soil Samples

Melbourne Water, Werribee, Victoria

Parameters	Number of Samples			≥1 in 20 Dups (i.e. >5%)	≥1 in 20 Trips (i.e. >5%)
	No. Primary	No. Dups	No. Trips		
Heavy Metals	11	1	1	Yes	Yes
TPH (C10-36)	2	-	-	No	No
PAH	4	-	-	No	No
OCP	4	-	-	No	No
OPP	4	-	-	No	No
pH	20	1	1	Yes	Yes
Nitrate	16	-	-	No	No
Nitrite	4	-	-	No	No
Flouride	6	-	-	No	No
Cyanide	2	-	-	No	No
E.Coli	16	-	-	No	No

Appendix J - Table 6

Soil Bores

Sub-Area 4A ESA - Summary of Adequacy of Field Duplicate Soil Samples

Melbourne Water, Werribee, Victoria

Parameters	Number of Samples			≥1 in 20 Dups (i.e. >5%)	≥1 in 20 Trips (i.e. >5%)
	No. Primary	No. Dups	No. Trips		
Heavy Metals	17	2	1	Yes	Yes
TPH (C6-9)	14	1	1	Yes	Yes
TPH (C10-36)	14	1	1	Yes	Yes
PAH	14	1	1	Yes	Yes
OCP	10	-	-	No	No
OPP	10	-	-	No	No
BTEX	4	1	1	Yes	Yes
PAH	14	-	-	No	No
PCB	10	-	-	No	No
Phenols	10	-	-	No	No
EPAV Screen	1	-	-	No	No

Appendix J - Table 7

Validation

Sub-Area 4A ESA - Summary of Adequacy of Field Duplicate Soil Samples

Melbourne Water, Werribee, Victoria

Parameters	Number of Samples			≥1 in 20 Dups (i.e. >5%)	≥1 in 20 Trips (i.e. >5%)
	No. Primary	No. Dups	No. Trips		
Heavy Metals	9	2	-	Yes	No
TPH (C6-9)	4	1	-	Yes	No
TPH (C10-36)	4	1	-	Yes	No
PAH	2	-	-	No	No
OCP	4	1	-	Yes	No
Abestos	4	-	-	No	No
pH	4	-	-	No	No
Nitrate	4	-	-	No	No
Nitrite	4	-	-	No	No
Ammonia	2	-	-	No	No

Appendix J - Table 8

Analysis Summary of RPDs

Sub-Area 4A ESA Grid - Analysis of Variation in Analyte Concentration

Melbourne Water, Werribee, Victoria

Parameters	No. Duplicate Sample Pairs	No. pairs >50% RPD	Total No. Analytical Pairs	Max non- conformance
Heavy Metals	2	0	36	
PAH	2	0	30	
OCP	1	0	21	
OPP	1	0	20	
TPH (C6-9)	2	0	2	
TPH (C10-36)	2	0	6	

Parameters	No. Triplicate Sample Pairs	No. pairs >50% RPD	Total No. Analytical Pairs	Max non- conformance
Heavy Metals	2	4	36	96% (Cobolt)
PAH	2	0	30	
OCP	1	0	21	
OPP	1	0	9	
TPH (C6-9)	2	0	2	
TPH (C10-36)	2	0	6	

Appendix J - Table 9

Analysis Summary of RPDs

Sub-Area 4A ESA Target- Analysis of Variation in Analyte Concentration

Melbourne Water, Werribee, Victoria

Parameters	No. Duplicate Sample Pairs	No. pairs >50% RPD	Total No. Analytical Pairs	Max non- conformance
Heavy Metals	1	2	18	100% (Mercury)
PAH				
OCP				
OPP				
TPH (C6-9)				
TPH (C10-36)				

Parameters	No. Triplicate Sample Pairs	No. pairs >50% RPD	Total No. Analytical Pairs	Max non- conformance
Heavy Metals	1	3	18	183% (Boron)
PAH				
OCP				
OPP				
TPH (C6-9)				
TPH (C10-36)				

Appendix J - Table 10

Analysis Summary of RPDs

Sub-Area 4A ESA Soil Bores - Analysis of Variation in Analyte Concentration

Melbourne Water, Werribee, Victoria

Parameters	No. Duplicate Sample Pairs	No. pairs >50% RPD	Total No. Analytical Pairs	Max non- conformance
Heavy Metals	2	0	19	
PAH	1	0	15	
BTEX	1	0	5	
TPH (C6-9)	1	0	1	
TPH (C10-36)	1	0	3	

Parameters	No. Triplicate Sample Pairs	No. pairs >50% RPD	Total No. Analytical Pairs	Max non- conformance
Heavy Metals	1	0	1	
PAH	1	0	15	
BTEX	1	0	5	
TPH (C6-9)	1	0	1	
TPH (C10-36)	1	0	3	

Appendix J - Table 11

Analysis Summary of RPDs

Sub-Area 4A ESA Validation - Analysis of Variation in Analyte Concentration

Melbourne Water, Werribee, Victoria

Parameters	No. Duplicate Sample Pairs	No. pairs >50% RPD	Total No. Analytical Pairs	Max non- conformance
Heavy Metals	2	1	26	133% (Mercury)
PAH	1	0	21	
TPH (C6-9)	1	0	1	
TPH (C10-36)	1	0	3	
Ammonia	1	0	1	
pH	1	0	1	

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Appendix D - Development Plans

RIVERWALK DEVELOPMENT PLAN EXTRACT SHOWING ONLY INDICATIVE LAND USES, STREET NETWORK AND EASEMENTS

INDICATIVE LAND BUDGET TABLE

Gross Site Area	158.45 ha
EXCLUSIONS	
SUBTOTAL EXCLUSIONS	14.42 ha
TOTAL EXCLUSIONS	29.97 ha
Gross Developable Area = Gross Site Area (158.45 ha) - Exclusions	128.48 ha
OPEN SPACE PROVIDED	
TOTAL PUBLIC OPEN SPACE PROVIDED	14.0 ha
Net Developable Area = Gross Developable Area - Public Open Space	110.48 ha
Maximum Dwelling Yield @ Net Developable Area x 15	2,217

Planning and Environment Act 1987

This Development Plan No: DP0086/09

was approved by Wyndham City Council on: 2 August 2010

Signature for the Responsible Authority

LEGEND

RIVERWALK *Werribee*

Development Plan

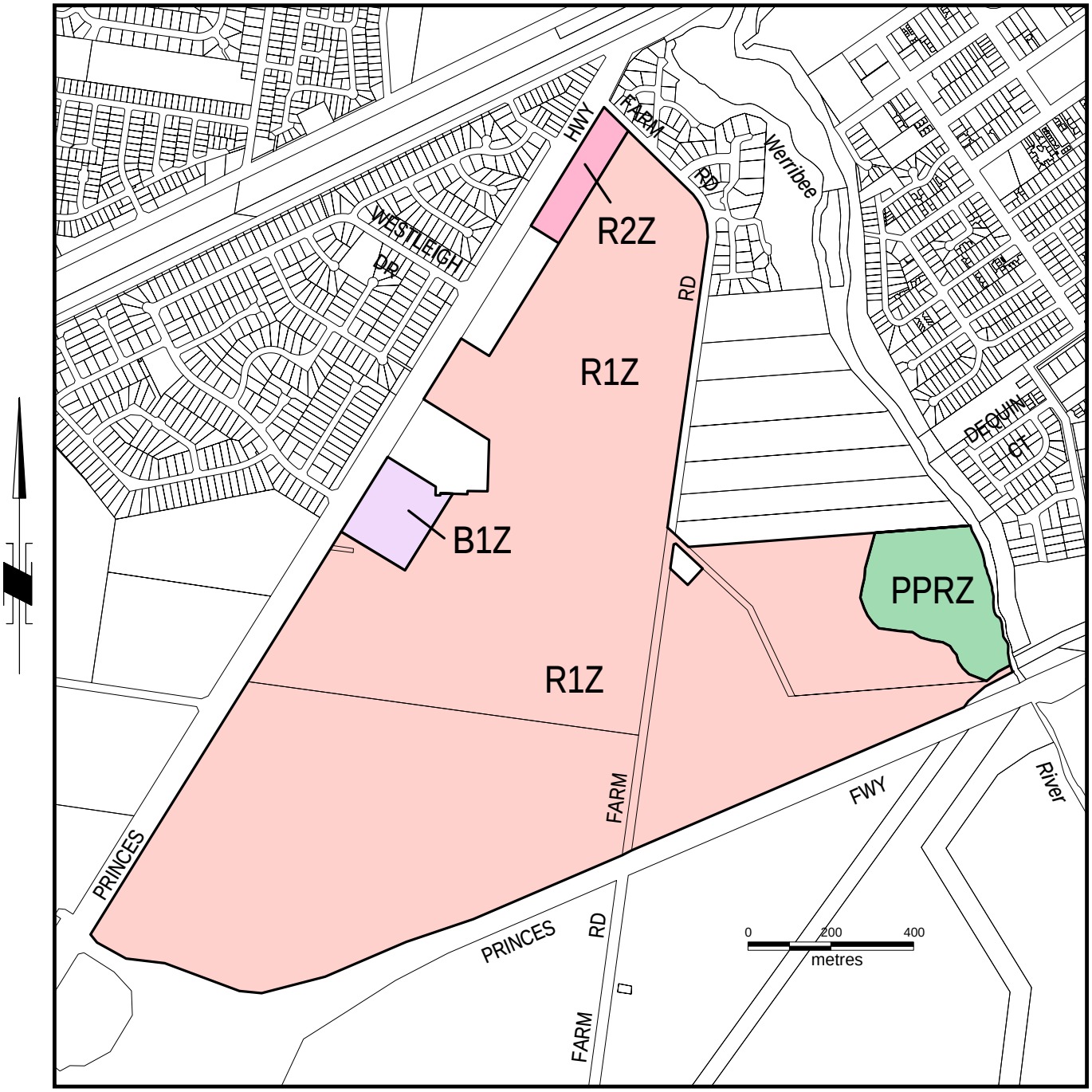
Scale 1:5000 @ A1 / 1:10000 @ A3 23 July 2010 090309-MD27a

Deicke Richards

the cool ESD ECOLOGICALLY SUSTAINABLE DESIGN

VicUrban remember the future

WYNDHAM PLANNING SCHEME
LOCAL PROVISION



Part of Planning Scheme Maps 15 & 16

LEGEND

R1Z	RESIDENTIAL 1 ZONE
R2Z	RESIDENTIAL 2 ZONE
B1Z	BUSINESS 1 ZONE
PPRZ	PUBLIC PARK AND RECREATION ZONE

AMENDMENT C96

PREPARED BY INFORMATION SERVICES
Geographical Information System

DEPARTMENT OF SUSTAINABILITY AND ENVIRONMENT

Victoria
The Place To Be

LEGEND

- KEY STREETS
- PROPOSED BUS ROUTE
- A — ALTERNATIVE BUS ROUTE SEGMENTS THAT MAY BE USED TO REDUCE ROUTE LENGTH
- PROPOSED BUS STOP
- POSSIBLE BUS ROUTE EXTENSION
- EXTERNAL PROPOSED PED / CYCLE ROUTES
- EXTERNAL PROPOSED PED / CYCLE ROUTES
- INTERNAL MAJOR PED / CYCLE NETWORK
- EXISTING BUILDINGS
- SIGNALISED INTERSECTION
- ALL TURNS 'T' INTERSECTION
- INTERSECTION WITH RIGHT TURN INTO GEELONG ROAD RESTRICTED
- ROUNDABOUT (not all are shown)
- SERVICE ROAD ARRANGEMENT
- POSSIBLE SERVICE ROAD ARRANGEMENT
- EXISTING NON-INDIGENOUS TREES LIKELY TO BE RETAINED
- TREE RESERVE
- INDIGENOUS TREES TO BE RETAINED
- EXISTING HISTORIC BUILDINGS
- RIVER CORRIDOR & FLOOD PRONE LAND
- ACOUSTIC TREATMENT
- INDICATIVE PRIORITY AREAS FOR HIGHER DENSITY RESIDENTIAL
- RESIDENTIAL
- VILLAGE CENTRE
- POSSIBLE NEIGHBOURHOOD CENTRE CORNER STORE
- COMMUNITY
- DISCOVERY CENTRE / HANGAR PRECINCT
- PUBLIC OPEN SPACE
- DRAINAGE RESERVE
- SOUTHERN EMPLOYMENT AREA
- EASEMENT

H, P1, C2 etc, KEYNOTES - REFER INDICATIVE LAND BUDGET TABLE

FIGURE 5.1.1 DEVELOPMENT PLAN

NOTE: ALL LAND USE BOUNDARIES AND STREET ALIGNMENTS ARE APPROXIMATE ONLY

Appendix E - Auditor's QA/QC Review

Review of the QA/QC of the Assessment

QA/QC check	Information provided	Auditor's comment
Sampling and Analysis Plan (SAP)	The assessor provided a SAP for the majority of the works.	The SAP and responses to auditor queries/comments on the SAP were considered adequate.
Field Procedures	The assessor's standard field procedures were provided.	The assessor's sampling procedures were reviewed and found to be consistent with current industry practice.
NATA accreditation	Laboratory Reports are provided in Appendix I of the assessor's report.	All reports contain the NATA certification stamp and were signed by a NATA authorised signatory.
QA/QC – Field Sampling		
Field duplicate/split sample frequency	<u>Soil:</u> For a total of 112 primary samples analysed (grid, target and validation) that were collected across six sampling events, a total of eight field duplicate and five split samples were analysed for one or more of inorganics, PAHs, TPHs, MAHs, OCPs, and OPPs.	<u>Soil:</u> The frequency of field duplicate and split sample analysis for inorganics is considered adequate (i.e. >1:20 primary sample analyses). An insufficient number of field duplicate and/or field triplicate samples (<1:20) were analysed for asbestos, ammonia, cyanide, fluoride, e.Coli, nitrate/nitrite, MAHs, pesticides, PAHs, pH, phenols, PCBs and VHCs. OTEK indicated that when the duplicate sampling frequency across the Overall Audit Area was considered, an appropriate number of duplicate samples were collected. The auditor requested that all relevant QA/QC data from other audit areas be included in the ESA report, however, this was not provided. The auditor also communicated to OTEK the overall analytical frequency of field duplicate and split samples was less than standard industry practice. Based on a review of the entire data set for the site, and given the following: • negligible concentrations of the abovementioned analytes were detected in samples collected across the site, • the absence of historical or ongoing sources at the site, and • the typically low concentrations of these analytes across the broader Riverwalk area, The auditor did not consider the reduced field duplicate/split sample analysis to have impacted on the reliability of data set as a whole.

QA/QC check	Information provided	Auditor's comment
	Groundwater: For two sampling events (conducted across the Overall Audit Area, comprising 8 wells in 2009 and 11 in 2011) a total of two field duplicate and two field split samples were analysed for one or more of inorganics, TPHs, BTEX, PAHs, phenols, chlorinated hydrocarbons, VOCs, major cations/anions, pH, and TDS.	Groundwater: A sufficient number of field duplicate and triplicate samples were analysed for an adequate analytical suite across all groundwater sampling events.
Field duplicate analyses and results	Soil: (primary / duplicate) 4A/G28/0.25 / 4A/QS-3 4A/G11/0.25 / 4A/QS-4 4A/G16/0.25 / 4A/QS-5 4A/T1B/0.5 / 4A/QS-12 4A/T5/VS-5 / 4A/VS/QS-1 4A/VS-3 / 4A/VS/QS-2 4A/B-8-12.0 / 4A/B-8/QS-1 (samples labelled "B-8 were taken from MW-7 but incorrectly labelled) MW-8/3.0 / MW-8/QS-1	Soil: The majority of RPDs calculated were within acceptable limits(<50%) with the exception of: • cobalt and mercury (4A/T1B/0.5 and 4A/QS-12); and • mercury (4A/T5/VS-5 and 4A/VS/QS-1). The high RPDs for mercury were due to small differences between low concentrations of analytes (<10 x LOR). The high RPD for cobalt was likely due to sample heterogeneity, which is not uncommon in soils. The concentrations were all well below the relevant investigation levels. All remaining RPDs were within acceptable limits. The minor exceedances above were not considered to have impacted on the reliability of data set for interpretive use.
	Groundwater: GME1: MW-8 / QS-1 GME2: MW-9 / QW_1_081211	Groundwater: All RPDs were within acceptable limits (<50%). As the GMEs involved sampling multiple wells across the Overall Audit Area, the field duplicate sample from GME2 was taken from a monitoring well outside of the site (i.e. within the Overall Audit Area). This was not considered to have impacted on the reliability of data set.

QA/QC check	Information provided	Auditor's comment
Field split analyses and results	Soil: 4A/G28/0.25 / 4A/QS-3A 4A/G11/0.25 / 4A/QS-4A 4A/G16/0.25 / 4A/QS-5A 4A/T1B/0.5 / 4A/QS-12A MW-8/3.0 / 4A/QS-1A	Soil: All field split RPDs were within acceptable limits with the exception of: • Chromium, cobalt and nickel (4A/G28/0.25 and 4A/QS-3A); • Chromium (4A/G16/0.25 and 4A/QS-5A); and • Cobalt (4A/T1B/0.5 and 4A/QS-12) OTEK noted the elevated RPDs are likely associated with low analyte concentrations near the laboratory reporting limits, sample heterogeneity, and/or differences in laboratory methodologies. The auditor generally concurred especially with the latter two conclusions, but notes that concentrations of these analytes were >10 x LOR. As all results were well below the investigation levels, these minor exceedances and discrepancies were not considered to affect the reliability of the data set.
	Groundwater: GME1: MW-8 / QS-1A GME2: MW-9 / QW_1A_081211	Groundwater: All groundwater field split RPDs were within acceptable limits, with the exception of arsenic, chromium, selenium, and nitrate for MW-8 / 4A/QS-1A. OTEK attributed these exceedances to small differences between low concentrations of analytes, and differences in laboratory analytical methodologies. The auditor concurred with this. Although likely due to small differences between low concentrations of analytes, the field split result for QS-1A for selenium was greater than the investigation levels for maintenance of ecosystems, primary contact recreation and stock watering. OTEK did not discuss this exceedance in the context of maintenance of ecosystems or stock watering. Further discussion is provided in Section 6.4.2 of this audit report. The minor exceedances were not considered to have impacted on the reliability of the overall data set. As the GMEs involved sampling multiple wells across the broader audit Area, the field split sample from GME2 was taken from a monitoring well outside of the site (i.e. within the broader Riverwalk Area). This was not considered to have impacted on the reliability of data set. .

QA/QC check	Information provided	Auditor's comment
Rinsate Blanks	<u>Soil:</u> Eleven rinsate blanks were collected during the soil sampling program, generally approximating one blank sample per day/sampling matrix: • 4A/RB-1 • 4A/RB-2 • 4A/RB-3 • 4A/RB-4 • 4A/RB-5 • 4A/RB-6 • 4A/RB-7 • 4B/RB-17 (collected during sampling event that also included Areas 4A and 4B) OTEK noted no rinsate blank samples were collected on 9 February 2009 (monitoring well installation) and 27 July 2009 (validation sampling).	<u>Soil</u>: Rinsate blank samples were collected for each sampling event, and analysed for one or more of inorganics, PAHs and TPHs, All results were below the laboratory limit of reporting (LOR). The auditor noted that rinsate blanks were not analysed for all CoPC. However, given the concentrations of the majority of analytes were below the investigation levels, the auditor did not consider the reduced analytical suite, or the omission of two rinsate blank samples to be significant.
	<u>Groundwater</u> A total of four rinsate blank samples were collected during the two monitoring events: • GME1: RB-2, RB-3 • GME2: RB-1_071211, RB-2_081211 The GMEs involved sampling wells across the broader Overall Audit Area.	<u>Groundwater</u>: Rinsate blank samples were analysed for inorganics only. This is not considered significant as inorganics were the only CoPC detected in soil and groundwater above the investigation levels. OTEK noted, in the text of OTEK 2012 that two rinsate blanks were collected, however, five blanks are tabulated. One of these (RB-1, from 2009) was not considered relevant to the sampling of MW7 and MW8 as it was collected on a different day. The auditor considered that overall sufficient rinsate blank samples were analysed to allow an assessment of potential cross contamination.

QA/QC check	Information provided	Auditor's comment
Trip Blanks	<u>Soil</u> Nine trip blank samples were analysed during the soil sampling program: • 4A/TB-1 • 4A/TB-2 • 4A/TB-3 • 4A/TB-4 • 4A/B-8/TB-1 (collected during sampling of 4A and 4B) • 4A/TB-11 • 4A/TB-13 • 4A/TB-14 • MW-8/TB-1 Trip blank samples were generally collected for each day of sampling, with the exception of 11, 14 or 15 April 2008 (grid sampling) and 17 April 2008 (target sampling).	<u>Soil</u> Trip blank samples were analysed for one or more of inorganics, BTEX, TPHs or PAHs. All results were below the laboratory LORs. The auditor noted that typically trip blanks were analysed for volatile contaminants, as cross contamination is more likely to occur during sample storage, transport and handling. However, given the absence of volatile contaminants detected at the site, soil sampling and handling methodology (observed by the auditor), overall it is considered that adequate trip blanks were analysed. For sampling undertaken on 7-8 December, trip blanks were labelled as 9 December (batch EM11140408. In a response to the auditor's query, OTEK indicated the trip blanks accompanied the samples to the laboratory, but were not available during sampling. This is not standard practice, but was not considered to be significant given the absence of volatile contaminants in all samples analysed. The omission of trip blanks on several sampling days and limited analysis was not considered to have impacted on the overall data set. It is considered that sufficient trip blanks were analysed to allow an assessment of potential cross contamination of samples during transport and handling of soil samples.
	<u>Groundwater</u> A total of three trip blank samples were analysed across two GMEs: • GME1: TB-2 • GME2: TB-1_091211, TB-2_091211 The GMEs involved sampling wells across the Overall Audit Area.	<u>Groundwater</u> Trip blanks were analysed for inorganics only. Typically trip blanks are analysed for volatile contaminants. However, in this instance volatiles were not detected in soil or groundwater at the site, therefore the omission of volatile analysis was not considered significant. OTEK, noted in the text of OTEK 2012 that two trip blanks were collected, however, four trip blanks were tabulated. One of these (TB-1, from 2009) was not considered relevant to the sampling of MW7 and MW8 as it was collected on a different day. No laboratory data were provided for TB-1. It is considered that sufficient trip blanks were analysed to allow an assessment of potential cross contamination of samples during transport and handling of groundwater samples.

QA/QC check	Information provided	Auditor's comment
QAQC - Laboratory		
Laboratory Internal QC	Laboratory analytical reports are presented in Appendix I of OTEK 2012.	Soil: ALS and Labmark generally performed sufficient analyses of QC samples, with satisfactory results for method blanks and laboratory duplicates. The majority of matrix spike, lab control sample, and surrogate recoveries were within acceptable ranges. The minor outliers noted on the laboratory reports and in OTEKs data validation reports (DVRs) were not considered significant given results of the majority of the QC data set were within acceptable ranges. Groundwater: Labmark and Groundswell generally performed adequate analysis of QC samples, with satisfactory results for method blanks, laboratory duplicates, the majority of matrix spikes/lab control samples, and surrogate recoveries. Overall the laboratories QC sample analysis and results were considered adequate.
Laboratory detection limits	Laboratory detection limits are detailed in the analytical reports, which were provided in Appendix I of OTEK 2012.	Soil: LORs were below the adopted criteria with the exception of some OCPs, PCBs, benz(ah)anthracene, and total phenolics. All results for these analytes were below the laboratory LOR. These detection limits were above the criteria, however, due the low concentrations detected in the samples this was not considered to affect the data reliability. Groundwater: LORs were below the adopted criteria with the exception of some inorganics (Cd, Hg, Pb), VOCs, BaP, phenolic compounds, OCPs, OPPs, and chlorinated hydrocarbons. Given the depth to groundwater (>10 mbgl) and generally low concentrations of these analytes in soils (predominantly <LOR) the elevated LORs were not considered significant. The above criteria detection limits for groundwater were not considered to affect the data reliability to any extent of concern.
Sample Management		
Holding times	Sample extraction and analysis dates are detailed in the analytical reports, which were provided in Appendix I of OTEK 2012.	The majority of soil and groundwater samples were extracted and analysed within acceptable holding times, with exception of: • Soil: 19 of a total of 65 samples for pH, four of 74 samples for TPH, two of 96 samples for PAHs, two out of seven samples for samples for cyanide and two out of 11 samples for total fluoride (all samples exceeding holding times were from ALS batch EM0802745). • Groundwater: For batch EM0912070 all samples (eight) for pH analysis. For batch EM1114048 all samples (12) for nitrate/nitrite analysis (EM1114048). The auditor queried why the holding time breaches occurred, and whether OTEK considered there were implications. OTEK indicated the majority of holding issues were due to human error, and it did not consider there were any implications on sample results. The auditor considered that based on the following, the holding time breaches were very unlikely to have had a significant effect on soil sample results for pH, TPHs, PAHs, cyanide and total fluoride:

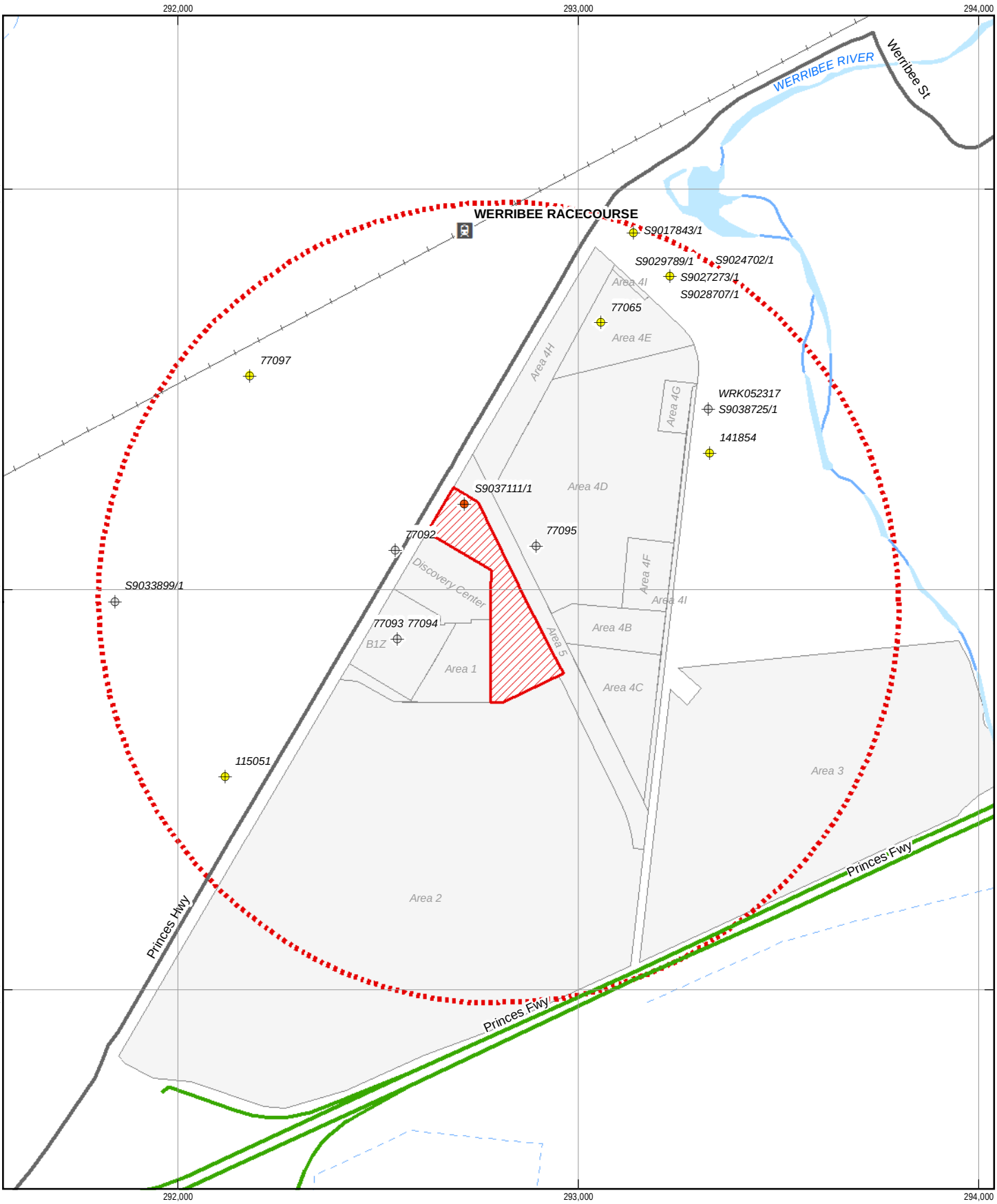
QA/QC check	Information provided	Auditor's comment
		• Samples were appropriately stored prior to analysis, • Concentrations of the specific analytes at the site and across the Overall Audit Area were low; • PID results were low (relevant to TPHs and PAHs only), and • No visual or olfactory observations of contamination were made at the site. With respect to groundwater samples analysed outside of holding time for pH, the auditor did not consider this significant as the laboratory measured pH results were consistent with field measured pH for the November 2009 sampling event, and were also consistent with pH measured across all the Overall Audit Area for all sampling events. The auditor considered that given groundwater samples were analysed for nitrate/nitrite four days outside of the holding time, it is possible that the concentrations may have changed during this time (e.g. bacteria may cause reduction of nitrate). However, nitrate/nitrite results from 2009 and 2011 are similar, and within the range of groundwater results from the Overall Audit Audit. Additionally samples were chilled and stored in darkened areas at the laboratory, reducing the likelihood of chemical reaction. Overall it was considered the exceedance of holding time has not impacted the overall integrity of the data set
Sample tracking	COCs are presented in Appendix K of OTEK 2012.	COCs were generally completed correctly and were provided for all samples. Where amendments were made to the COC, relevant correspondence was provided in the majority of instances. The omission of some correspondence between OTEK and the laboratory was not considered to impact on the reliability of the data.
Sample preservation and storage	A summary of the assessor's standard field procedures were provided.	The assessor specified appropriate sample preservation and storage methods in its reports, with the exception of a single occurrence when rinsate/trip blank samples were incorrectly placed in unpreserved bottles for dissolved inorganics analysis (batches EM0802745 and EM0803020). As this pertains only to blank samples, which are unlikely to contain significant concentrations of inorganics or sediment (which can potentially cause leaching or adsorpsion of inorganics in unpreserved samples), this oversight was not considered to impact on the quality of the soil data set.
Calibration of field instruments	The assessor provided calibration logs and certificates in Appendices F and H of OTEK 2012.	Calibration certificates were provided for all relevant sampling equipment used during the soil and groundwater sampling program.

QA/QC check	Information provided	Auditor's comment
Additional comments	During GME1 (November 2009) the sample from MW-8 was labelled A1/MW-8 instead of A4/MW-8.	OTEK identified this in OTEK 2012. This was not considered to impact the quality of the data.
	Composite sample was undertaken on pH and PAHs, which is not in accordance with AS4482.1.	The auditor communicated to OTEK the analysis of composite samples for pH and PAH was not appropriate. However, given the non-detect results for PAHs in individual samples, absence of potential sources across the site (validation samples from potential source areas were not composited) and adequate pH analysis on individual samples this oversight was not considered to affect the reliability/quality of the data.
	Composite sample 4A/C37 comprised different soil types (gravel fill, silt).	Given the majority of analytical results for 4A/C37 were below the ILs (with the exception of manganese, nickel and vanadium which were within the range of concentrations in other 4A composite samples) this was not considered to impact on the reliability/quality of the data.

Appendix F – Groundwater Database Search

AREA	site	latitude	longitude	zone54_eas	zone54_no	zone55_ea	zone55_no	survey_des	party_name	location_c	USE
Sub Area 4A	115051	-37.919	144.635	819540.229	5796888	292113.1	5800484	TRANSLATION TO GDA94	NOT KNOWN	Map Number 782232	DOMESTIC
Sub Area 4A	141854	-37.912	144.649	820846.512	5797706	293363.1	5801384	TRANSLATION TO GDA94	NOT KNOWN	Map Number 782222	DOMESTIC
Sub Area 4A	77065	-37.909	144.646	820565.905	5798051	293061.1	5801710	TRANSLATION TO GDA94	NOT KNOWN	Map Number 782232	STOCK
Sub Area 4A	77092	-37.914	144.64	820012.153	5797519	292543.1	5801144	TRANSLATION TO GDA94	NOT KNOWN	Map Number 782232	NOT KNOWN
Sub Area 4A	77093	-37.916	144.64	819965.451	5797262	292513.1	5800884	TRANSLATION TO GDA94	NOT KNOWN	Map Number 782232	NOT KNOWN
Sub Area 4A	77094	-37.916	144.64	819966.095	5797272	292513.1	5800894	TRANSLATION TO GDA94	NOT KNOWN	Map Number 782232	NOT KNOWN
Sub Area 4A	77095	-37.914	144.644	820390.356	5797475	292923.1	5801124	TRANSLATION TO GDA94	NOT KNOWN	Map Number 782232	NOT KNOWN
Sub Area 4A	77097	-37.91	144.636	819654.556	5797883	292163.1	5801484	TRANSLATION TO GDA94	NOT KNOWN	Map Number 782232	NOT KNOWN
Sub Area 4A	S9017843/1	-37.907	144.647	820650.62	5798276	293131.1	5801940	TRANSLATION TO GDA94	SOUTHERN RURAL WATER		DOMESTIC AND STOCK
Sub Area 4A	S9019019/1	-37.908	144.648	820732.291	5798159	293220.1	5801828	TRANSLATION TO GDA94	SOUTHERN RURAL WATER		DOMESTIC AND STOCK
Sub Area 4A	S9019684/1	-37.908	144.648	820735.9	5798121	293226.1	5801791	TRANSLATION TO GDA94	SOUTHERN RURAL WATER		DOMESTIC AND STOCK
Sub Area 4A	S9024702/1	-37.908	144.649	820828.899	5798088	293321	5801764	NOT KNOWN	SOUTHERN RURAL WATER		DOMESTIC AND STOCK
Sub Area 4A	S9027273/1	-37.908	144.648	820759.41	5798115	293250	5801786	NOT KNOWN	SOUTHERN RURAL WATER		DOMESTIC AND STOCK
Sub Area 4A	S9028707/1	-37.908	144.648	820708.798	5798154	293197	5801822	NOT KNOWN	HANSON JAMES A		DOMESTIC AND STOCK
Sub Area 4A	S9029789/1	-37.908	144.648	820700.39	5798164	293188	5801831	NOT KNOWN	SOUTHERN RURAL WATER		DOMESTIC AND STOCK
Sub Area 4A	S9033899/1	-37.915	144.632	819345.921	5797438	291884	5801020	NOT KNOWN	SOUTHERN RURAL WATER		NOT KNOWN
Sub Area 4A	S9037111/1	-37.913	144.642	820160.524	5797614	292685	5801248	NOT KNOWN	SOUTHERN RURAL WATER		GROUNDWATER INVESTIGATION
Sub Area 4A	S9038725/1	-37.911	144.649	820819.539	5797741	293334	5801417	NOT KNOWN	SOUTHERN RURAL WATER		NOT KNOWN
Sub Area 4A	WRK052317	-37.911	144.649	820815.703	5797790	293327	5801466	NOT KNOWN	CARLON ALLEN		DOMESTIC AND STOCK

AREA	GMS_SITE	INTERVAL_F	INTERVAL_T	MATERIAL
Sub Area 4A	115051	0	1	OVERBURDEN
Sub Area 4A	115051	1	4	BROWN SOIL (CLAYEY)
Sub Area 4A	115051	4	7.5	CLAY (GREASY BACK)
Sub Area 4A	115051	7.5	11.5	BAALT (SOFT)
Sub Area 4A	115051	19	21	BASALT (HARD)
Sub Area 4A	115051	21	19	BASALT (POROUS)
Sub Area 4A	141854	0	1.5	OVERBURDEN
Sub Area 4A	141854	1.5	8	BROWN CLAYEY SOIL
Sub Area 4A	141854	8	10.5	SILT
Sub Area 4A	141854	10.5	12.5	GRAVEL
Sub Area 4A	141854	12.5	18	BASALT (WEATHERED)
Sub Area 4A	141854	18	22	HARD BASALT
Sub Area 4A	141854	22	25.5	FRACTURED BASALT
Sub Area 4A	77065	0	1.52	TOP SOIL
Sub Area 4A	77065	1.52	9.4	RED CLAY
Sub Area 4A	77065	9.4	11.23	WHITE CLAY
Sub Area 4A	77065	11.23	24.99	BASALT
Sub Area 4A	77092	0	0.3	TOP SOIL
Sub Area 4A	77092	0.3	12.19	CLAY
Sub Area 4A	77092	12.19	15.24	WASHED RIVER GRAVEL
Sub Area 4A	77092	15.24	16.15	BASALT
Sub Area 4A	77093	0	0.3	TOPSOIL
Sub Area 4A	77093	0.3	7.62	MOTTLED CLAY
Sub Area 4A	77093	7.62	13.71	HONEYCOMB BASALT
Sub Area 4A	77093	13.71	15.24	BROKEN HONEYCOMB BASALT
Sub Area 4A	77094	0	0.3	TOP SOIL
Sub Area 4A	77094	0.3	8.8	ORANGE CLAY
Sub Area 4A	77094	8.8	22.86	HONEYCOMB BASALT
Sub Area 4A	77094	22.86	31.69	GREEN BASALT
Sub Area 4A	77094	31.69	33.52	PEAT THEN CLAY
Sub Area 4A	77095	0	0.3	TOP SOIL
Sub Area 4A	77095	0.3	11.58	FINE SANDY CLAY
Sub Area 4A	77095	11.58	14.93	RIVER GRAVEL & CLAY
Sub Area 4A	77095	14.93	15.5	SANDY CLAY
Sub Area 4A	77097	0	3	SOIL OVERBURDEN
Sub Area 4A	77097	3	6	SILT
Sub Area 4A	77097	6	12.19	CLAY
Sub Area 4A	77097	12.19	13.5	BASALT (HARD)
Sub Area 4A	77097	13.5	16.7	BASALT (SOFT)
Sub Area 4A	77097	16.7	18.29	BASALT (HARD)
Sub Area 4A	S9019019/	0	1.5	OVERBURDEN
Sub Area 4A	S9019019/	1.5	7	GREY CLAY
Sub Area 4A	S9019019/	7	11	BROWN CLAY
Sub Area 4A	S9019019/	11	15	FINE SAND
Sub Area 4A	S9019019/	15	18	GRAY CLAY
Sub Area 4A	S9019019/	18	20	YELLOW SAND
Sub Area 4A	S9019019/	20	21	GRAVEL
Sub Area 4A	S9019684/	0	0.5	OVERBURDEN
Sub Area 4A	S9019684/	0.5	3	BRWON CLAY
Sub Area 4A	S9019684/	3	6.2	GREY CLAY
Sub Area 4A	S9019684/	6.2	12.5	BRWON CLAY/SILT
Sub Area 4A	S9019684/	12.5	16	COURSE GRAVEL
Sub Area 4A	S9019684/	16	22	GRAVEL/BASLT
Sub Area 4A	S9024702/	0	0.5	TOP SOIL
Sub Area 4A	S9024702/	0.5	4.5	MOIST BROWN SANDY CLAY
Sub Area 4A	S9024702/	4.5	7	DRY GREY CLAY
Sub Area 4A	S9024702/	7	10	SILT
Sub Area 4A	S9024702/	10	11.5	SAND
Sub Area 4A	S9024702/	11.5	13	COARSE GRAVEL
Sub Area 4A	WRK05231	0	8	brown clay
Sub Area 4A	WRK05231	8	20	basalt grey
Sub Area 4A	WRK05231	20	24	firm basalt



LEGEND

- Area Boundary
- Area Boundary - Map Focus
- 1km Buffer from Area

Bore Use (Site ID)

- Not Known / Misc
- Domestic and stock
- Groundwater Investigation

Paper Size A4

0 75 150 300 450

Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 55

N

Client: Melbourne Water

Project: **Environmental Audit of Area 4A**, Riverwalk Estate, Princes Highway, Werribee

Groundwater Bore Search

Job Number	31-11575-00
Revision	A
Date	13 Mar 2013

Appendix F

G:\31\11575500\Cad\GIS\Maps\Deliverables\311157500_001_SiteArea_GMSbores.mxd

180 Lonsdale Street Melbourne VIC 3000 Australia **T** 61 3 8687 8000 **F** 61 3 8687 8111 **E** melmail@ghd.com **W** www.ghd.com

Data source: GMS, DSE, 2012; Site Areas, GHD, 2012. Created by:kkamruzzaman

Appendix G – Imported Fill Reports

Level 1
222 St Kilda Rd
St Kilda VIC 3182

Tel (03) 9525 5155
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ABN 32 054 371 596

21 August 2007

Dr Fouad Abo
Environmental Auditor
Level 8, 180 Lonsdale Street
Melbourne VIC 3000

Riverwalk – Imported Fill Material Stockpile Sample Results

Werribee, Victoria

Dear Fouad/ Julie,

Please find attached the results for validation samples obtained from the imported fill material sourced from the Readymix Werribee Quarry located at Wests Road, Werribee (Lot 2 TP855710). A total of 40 validation samples were obtained from approximately 2,000 m^3 (rate of approx. 1:50 m^3) of soil that was excavated overburden clay from within the quarry. The material was used to backfill one excavation in Area 3 and three excavations in Area 4 at the Riverwalk site.

Quality Assurance/Quality Control (QA/QC)

Primary analytical laboratory testing was performed by Labmark Pty Limited (Labmark), which is located at South Melbourne, Victoria. Secondary (QC) laboratory testing was performed by ALS Pty Limited (ALS), of Springvale, Victoria. Labmark and ALS are certified by the National Association of Testing Authorities (NATA) for the analysis performed.

Quality Assurance (QA)

As part of the OTEK's QA program, samples to be submitted for analytical testing were collected in a new 250 mL glass jar, filled completely with no headspace and capped with a Teflon lined lid. The samples were uniquely labelled in accordance with the sample plan, placed on ice in an esky and transferred to the analytical laboratories using appropriate sample preservation procedures and chain of custody documentation. Additional soil samples were collected in resealable plastic bags for subsequent field screening using a photo ionisation detector (PID). The samples were collected in the field by OTEK personnel, placed into laboratory prepared sample receptacles and transferred to the laboratory using proper sample preservation procedures and chain-of-custody documentation.

Due to the use of new disposable gloves for sampling, decontamination of equipment was not required.

A labelling system identifies the origin of each soil sample collected, e.g. IF-1. The label 'IF' refers to the material being imported fill and number '1' refers to the sample number Samples

labelled IF/QS-# are duplicate samples analysed by the primary laboratory in order to determine the precision of the laboratory analyses and samples labelled IF/QS-#A are triplicate samples analysed by a second laboratory in order to determine the accuracy of the laboratory analyses. IF/TB-#' refers to trip blank samples which are analysed to determine the potential for cross contamination to have occurred during sampling and sample storage and transport.

Quality Control (QC)

Quality Control sampling and analysis was conducted as part of OTEK's QA/QC program in order to validate the integrity of field procedures and assess the accuracy and precision of laboratory analyses. During the sampling program, a total of 40 primary soil samples and three duplicate (blind replicate samples), three triplicate (split samples) samples and two trip blank samples (QC) were collected and analysed as part of the Quality Control program. NEPM (1999) requires that QC samples be analysed at a rate of one in 10 which this sampling program exceeded.

The analytical program for the validation of the imported fill material was discussed with the environmental auditor and the analytical program listed below was agreed to via email on the 8th May 2007.

The analytical program is summarised as follows:

- One sample per 50 m^3;
- One in 10 samples analysed for Full VIC EPA suite;
- All other samples analysed for metals, total petroleum hydrocarbons (TPH c_6-c_{36}), Organochlorine Pesticides (OCP), phenols, Polyaromatic Hydrocarbons (PAH); and
- One blind and one split sample per 20 samples obtained.

Analytical Results Summary – Stockpiled Imported Fill Material

Before to soil was imported to site, it was temporarily stockpiled at the Readymix Werribee Quarry. 40 validation samples were obtained from one stockpile containing approximately 2,000 m3 of clay overburden material. The analytical results indicated:

- Concentrations of heavy metals in the individual samples were below NEPM HILs 'A' for all metals (refer Table 3).
- The barium concentration in 16 of 240 individual samples exceeded the NEPM EIL of 300 mg/kg, with a maximum concentration of 1,050 mg/kg measured in sample IF-39 (Table 3). The standard deviation of the barium concentrations in the stockpiled material was 219 with a mean concentration of 321 mg/kg and a calculated 95% UCL of 381 mg/kg (Table 1). Although the barium concentration recorded in sample IF-39 exceeds the respective EIL by 250%, it is within the NEPM background range for Australian soils of 100 to 3,000 mg/kg. Therefore, OTEK considers these

concentrations likely to be representative of background conditions and are acceptable for the intended land use;

- The manganese concentration in 13 of 40 individual samples exceeded the NEPM EIL of 500 mg/kg, with a maximum concentration of 729 mg/kg measured in sample IF-40 (Table 3). The standard deviation of the manganese concentrations in the stockpiled material was 201 with a calculated 95% UCL of 385 mg/kg (Table 1). The manganese concentration recorded in sample IF-40 exceeds the respective EIL by 46% and is below the NEPM background range for Australian soils of 850 mg/kg. Therefore, OTEK considers these concentrations likely to be representative of background conditions and are acceptable for the intended land use; and
- The vanadium concentration in 16 of 36 individual samples exceeded the NEPM EIL of 50 mg/kg, with a maximum concentration of 150 mg/kg measured in sample IF-14 (Table 3). The standard deviation of the vanadium concentrations in the stockpiled material was 24 with a mean concentration of 56 mg/kg and a calculated 95% UCL of 63 mg/kg (Table 1). Although the vanadium concentration recorded in sample IF-14 exceeds the respective EIL by 200%, both the mean concentration and 95% UCL of vanadium in the material exceed the NEPM which suggests that the elevated vanadium concentrations are natural background levels. These vanadium concentrations are consistent with many basaltic clays located in the Newer Volcanic basalt regions west of Melbourne. The concentrations are also within the NEPM background range for Australian soils of 20 to 500 mg/kg. Therefore, OTEK considers these concentrations likely to be representative of background conditions and are acceptable for the intended land use.

A summary of this data (the EIL exceedences) follows on Table 1. Tables 2 through 23 summarise all of the data.

Table 1 – Stockpile Exceedence of EIL 95% UCLs

Metal	Maximum Concentration (mg/kg)	Median Concentration (mg/kg)	Minimum Concentration (mg/kg)	Number of Samples	Mean Concentration (mg/kg)	Standard Deviation	95% UCL[1] (mg/kg)	NEPM EIL (mg/kg)	NEPM Background Range (mg/kg)
Barium	1050	275	100	40	321	219	381	300	100 - 3,000
Manganese	729	319	31	40	331	201	385	500	850
Vanadium	150	49	32	36	56	24	63	50	20 - 500

Note: [1] UCL = Upper Confidence Limit.
Shading indicates an exceedence of the EIL

- All other potential contaminants of concern measured are below the relevant criteria; and

- All 40 pH values recorded are slightly alkaline (range between 8.9 and 9.5), which is consistent with pH levels recorded in the natural basaltic clays associated with the Newer Volcanics in the region west of Melbourne (Table 16).

Analytical Results Summary – QA/QC Samples

The results of blind duplicate sampling indicated good agreement between the 6 primary and duplicate samples analysed (refer to Tables 19 to 23). Of the 208 RPD values calculated, 188 (or 90.4%) were reported to be within the ±50% acceptance range set by Australian Standard AS4482.1. RPD values were calculated where one of the values reported an analyte concentration below the laboratory detection limit by assuming the detection limit was the concentration obtained. However, where both samples in the duplicate pair reported analyte concentrations below the laboratory PQLs a qualitative assessment was made and the results considered acceptable for the purpose of the investigation.

OTEK considers that the small number of sample discrepancies may be attributable to low analyte concentrations reported near the limits of detection and sample heterogeneity. We note that the discrepancies between the recorded metal concentrations show that the duplicate sample concentrations are mainly less than those recorded in the primary samples.

Analytical Results Summary – Blank Samples

The analysis of the two trip blanks (IF/TB-1 and IF/TB-2) obtained for the soil sampling program contained low-level cadmium, copper and manganese concentrations that marginally exceeded the laboratory PQLs were measured in one of the two trip blank samples (Table 18). This indicates that the deionized water supplied by the primary laboratory may have already contained cadmium, copper and manganese at this concentration. An informal internal audit was conducted by ALS (supplier of the deionized water) in reference to the concentrations of metals measured. ALS confirmed that the rinsate water supplied was likely to have been contaminated before use.

Analytical Results Summary – Laboratory QA/QC

Based on our evaluation of the QA/QC program, OTEK are of the opinion that the quality of the data is suitably reliant to conclude the results accurately reflecting the overall nature of the material.

Use of Material

The marginal exceedence of EILs of barium, manganese and vanadium concentrations appear to be background concentrations and all fall within the NEPM background range, OTEK considers that the stockpiled material is suitable for use as fill for backfilling any part of the excavations located in Areas 3 and 4 of Melbourne Waters Riverwalk Project.

If you have any questions please contact either of the undersigned on (03) 9525 5155.

Regards,

Tom Santwyk-Anderson
Environmental Project Manager

Charles D. Barber
Director

Attachments:

Soil Analytical Summary Tables (22 pages)

Imported Fill – Analytical Reports (133 Pages)

TABLE 2
STANDARD SAMPLE IDENTIFICATION
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Date
IF-1	23-May-07
IF-2	23-May-07
IF-3	23-May-07
IF-4	23-May-07
IF-5	23-May-07
IF-6	23-May-07
IF-7	23-May-07
IF-8	23-May-07
IF-9	23-May-07
IF-10	23-May-07
IF-11	23-May-07
IF-12	23-May-07
IF-13	23-May-07
IF-14	23-May-07
IF-15	23-May-07
IF-16	23-May-07
IF-17	23-May-07
IF-18	23-May-07
IF-19	23-May-07
IF-20	23-May-07
IF-21	23-May-07
IF-22	23-May-07
IF-23	18-Jun-07
IF-24	18-Jun-07
IF-25	18-Jun-07
IF-26	18-Jun-07
IF-27	18-Jun-07
IF-28	18-Jun-07
IF-29	18-Jun-07
IF-30	18-Jun-07
IF-31	18-Jun-07
IF-32	18-Jun-07
IF-33	18-Jun-07
IF-34	18-Jun-07
IF-35	18-Jun-07
IF-36	18-Jun-07
IF-37	18-Jun-07
IF-38	18-Jun-07
IF-39	18-Jun-07
IF-40	18-Jun-07
IF/TB-1	23-May-07
IF/TB-2	18-Jun-07
IF/QS-1 (Duplicate of IF-5)	23-May-07
IF/QS-1A (Triplicate of IF-5)	23-May-07
IF/QS-2 (Duplicate of IF-20)	23-May-07
IF/QS-2A (Triplicateof IF-20)	23-May-07
IF/QS-3 (Duplicate of IF-35)	18-Jun-07
IF/QS-3A (Triplicateof IF-35)	18-Jun-07

TABLE 3
SOIL ANALYTICAL SUMMARY
METALS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc	Mercury
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Sn	V	Zn	Hg
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<1	1	140	<1	7	<0.1	16	16	7	9	170	<1	11	<2	<1	-	7	<0.05
IF-2	23-May-07	<1	1	140	<1	6	<0.1	14	10	6	9	160	<1	9	<2	<1	35	5	<0.05
IF-3	23-May-07	<1	2	180	<1	7	<0.1	18	16	8	10	250	<1	14	<2	<1	49	6	<0.05
IF-4	23-May-07	<1	1	250	<1	8	<0.1	16	11	7	9	140	<1	9	<2	<1	46	6	<0.05
IF-5	23-May-07	<1	9	170	<1	7	<0.1	27	45	19	10	690	<1	40	<2	<1	120	11	<0.05
IF-6	23-May-07	<1	<1	150	<1	8	<0.1	15	16	6	9	130	<1	8	<2	<1	38	5	<0.05
IF-7	23-May-07	<1	2	160	<1	7	<0.1	15	10	6	9	77	<1	11	<2	<1	51	<5	<0.05
IF-8	23-May-07	<1	2	130	<1	6	<0.1	18	16	8	9	180	<1	16	<2	<1	48	6	<0.05
IF-9	23-May-07	<1	1	160	<1	7	<0.1	18	12	9	8	160	<1	11	<2	<1	51	6	<0.05
IF-10	23-May-07	<1	2	100	<1	6	<0.1	16	11	8	8	140	<1	9	<2	2	-	6	<0.05
IF-11	23-May-07	<1	1	140	<1	6	<0.1	18	23	7	9	110	<1	14	<2	<1	43	6	<0.05
IF-12	23-May-07	<1	1	260	<1	6	<0.1	18	16	7	9	160	<1	15	<2	<1	42	6	<0.05
IF-13	23-May-07	<1	<1	140	<1	6	<0.1	18	19	7	9	320	<1	12	<2	<1	39	6	<0.05
IF-14	23-May-07	<1	12	290	<1	8	<0.1	36	32	17	10	320	<1	33	<2	<1	150	10	<0.05
IF-15	23-May-07	<1	<1	140	<1	8	<0.1	17	10	6	8	96	<1	8	<2	<1	36	6	<0.05
IF-16	23-May-07	<1	<1	160	<1	7	<0.1	15	9	5	7	50	<1	5	<2	<1	32	5	<0.05
IF-17	23-May-07	<1	<1	210	<1	7	<0.1	22	13	6	9	150	<1	11	<2	<1	36	7	<0.05
IF-18	23-May-07	<1	2	190	<1	7	<0.1	21	28	10	12	220	<1	14	<2	<1	57	7	<0.05
IF-19	23-May-07	<1	<1	300	<1	5	<0.1	18	12	6	9	290	<1	11	<2	<1	37	5	<0.05
IF-20	23-May-07	<1	2	360	<1	8	<0.1	22	18	8	10	240	<1	14	<2	<1	55	8	<0.05
IF-21	23-May-07	<1	1	130	<1	7	<0.1	18	8	7	9	31	<1	8	<2	<1	48	6	<0.05
IF-22	23-May-07	<1	1	210	<1	7	<0.1	20	10	7	9	120	<1	11	<2	<1	49	7	<0.05
IF-23	18-Jun-07	<1	<1	365	1	11	<0.1	35	18	9	11	529	<1	18	<2	<1	-	18	<0.05
IF-24	18-Jun-07	<1	1	459	1	10	<0.1	39	15	11	12	557	<1	27	<2	<1	55	22	0.05
IF-25	18-Jun-07	<1	2	139	<1	<5	<0.1	27	17	10	12	532	<1	17	<2	<1	55	9	0.06
IF-26	18-Jun-07	<1	<1	616	1	9	<0.1	31	23	9	12	625	<1	17	<2	<1	46	15	<0.05
IF-27	18-Jun-07	<1	<1	296	1	10	<0.1	34	15	9	10	379	<1	18	<2	<1	46	16	<0.05
IF-28	18-Jun-07	<1	<1	616	1	7	<0.1	25	16	8	11	515	<1	19	<2	<1	46	13	<0.05
IF-29	18-Jun-07	<1	<1	306	1	5	<0.1	25	11	7	10	346	<1	16	<2	<1	46	12	0.05
IF-30	18-Jun-07	<1	2	469	1	8	<0.1	35	24	11	11	635	<1	30	<2	<1	50	18	<0.05
IF-31	18-Jun-07	<1	5	413	1	10	<0.1	49	23	13	13	362	<1	25	<2	<1	108	18	<0.05
IF-32	18-Jun-07	<1	2	692	1	7	<0.1	32	21	10	9	521	<1	28	<2	<1	-	16	<0.05
IF-33	18-Jun-07	<1	1	357	1	10	<0.1	48	14	12	10	318	<1	27	<2	<1	54	19	<0.05
IF-34	18-Jun-07	<1	2	411	<1	7	<0.1	30	23	11	9	535	<1	28	<2	<1	53	15	<0.05
IF-35	18-Jun-07	<1	2	353	1	7	<0.1	27	27	10	10	565	<1	20	<2	<1	60	11	<0.05
IF-36	18-Jun-07	<1	3	300	1	8	<0.1	40	24	14	12	325	<1	22	<2	<1	89	17	<0.05
IF-37	18-Jun-07	<1	2	410	<1	5	<0.1	23	17	9	8	456	<1	23	<2	<1	49	11	<0.05
IF-38	18-Jun-07	<1	2	935	1	17	<0.1	56	25	12	10	573	<1	44	<2	<1	59	25	<0.05
IF-39	18-Jun-07	<1	1	1050	1	24	<0.1	74	25	16	11	517	<1	45	<2	<1	56	33	<0.05
IF-40	18-Jun-07	<1	2	555	1	26	<0.1	79	43	18	12	729	<1	50	<2	<1	66	39	<0.05
NEPM EILs		*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	*	60	*	*	50	200	1
NEPM "A" HILs - Residential		*	100	*	20	3000	20	100 (CrVI) 12% (CrIII)	100	1,000	300	1,500	*	600	*	*	*	7,000	15
ANZECC 1992 Environmental Criteria		20	20	*	*	*	3	50	*	60	300	500	*	60	*	50	60	200	1
NEPM Background ranges		4-44^	1-50	100-3,000	*	*	1	5-1,000	1-40	2-100	2-200	850	*	5-500	*	1-25^	20-500	10-300	0.03
Practical Quantitation Limits (Labmark)		1	1	5	1	5	0.1	1	1	2	2	5	1	1	2	1	5	5	0.05
Laboratory Methodology (Labmark)		E022.2																	E026.2

Notes: "*" Criterion not specified.
"^" ANZECC 1992 Background Range given in absence of NEPM Background Range.
Light grey shading indicates concentrations above NEPM EILs (divided by two)
Dark grey shading indicates concentrations above NEPM "A" HILs (divided by two)

OTEK AUSTRALIA PTY LTD

TABLE 4
SOIL ANALYTICAL SUMMARY
BTEX & TPH
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	BTEX				TPH			
		Benzene	Toluene	Ethyl-Benzene	Total Xylenes	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100
IF-2	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-3	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-4	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-5	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-6	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-7	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-8	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-9	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-10	23-May-07	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100
IF-11	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-12	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-13	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-14	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-15	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-16	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-17	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-18	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-19	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-20	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-21	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-22	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-23	18-Jun-07	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100
IF-24	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-25	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-26	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-27	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-28	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-29	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-30	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-31	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-32	18-Jun-07	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100
IF-33	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-34	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-35	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-36	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-37	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-38	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-39	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF-40	18-Jun-07	-	-	-	-	<10	<50	<100	<100
NSW EPA Criteria (1)		1	1.4	3.1	14	65	1,000		
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	1.5	2	50	100	100
Laboratory Methodology (Labmark)		EP080				EP080/071			

Notes: "*" Criterion not specified.

(1) New South Wales Environment Protection Authority (NSW EPA) threshold criteria for the assessment of service station sites. Levels at o below these thresholds indicate suitability for sensitive land use (NSW EPA, 1994).

"-" Sample not analysed.

TABLE 5
SOIL ANALYTICAL SUMMARY
SEMIVOLATILE CHLORINATED HYDROCARBONS (sVCH)
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2-dichlorobenzene	Hexachloroethane	1,2,4-trichlorobenzene	Hexachloropropene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Pentachlorobenzene	Hexachlorobenzene
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5
IF-23	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5
IF-32	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5
NEPM EILs		*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits		0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5
Laboratory Methodology		E017.2									

Notes:
"<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
"-" = Sample not analysed.

TABLE 6
SOIL ANALYTICAL SUMMARY
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)															
		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)Anthracene	Chrysene	Benzo(b+k)Fluoranthene	Benzo(a)Pyrene	Indeno(1,2,3,-cd)Pyrene	DiBenz o(a,h)Anthracene	Benzo(g,h,i)Perylene	Total PAH
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-2	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-3	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-4	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-5	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-6	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-7	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-8	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-9	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-11	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-12	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-13	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-14	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-15	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-16	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-17	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-18	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-19	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-20	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-21	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-22	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-23	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-24	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-25	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-26	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-27	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-28	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-29	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-30	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-31	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-32	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-33	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-34	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-35	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-36	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-37	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-38	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-39	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-40	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*	*	*	1	*	*	*	20
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5	-
Laboratory Methodology (Labmark)		E007.2															

Notes: "<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.

TABLE 7
SOIL ANALYTICAL SUMMARY
PHENOLS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	PHENOLIC GROUPS										
		Phenol	2-chlorophenol	2-methylphenol	3-&4-methylphenol	2-nitrophenol	2,4-dimethylphenol	2,4-dichlorophenol	4-chloro-3-methylphenol	2,4,6-trichlorophenol	2,4,5-trichlorophenol	Pentachlorophenol
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-2	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-3	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-4	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-5	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-6	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-7	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-8	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-9	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-11	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-12	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-13	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-14	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-15	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-16	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-17	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-18	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-19	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-20	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-21	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-22	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-23	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-24	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-25	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-26	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-27	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-28	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-29	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-30	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-31	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-32	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-33	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-34	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-35	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-36	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-37	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-38	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-39	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-40	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		8,500	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	-	0.5	0.5	0.5	0.5	-	0.5	0.5
Laboratory Methodology (Labmark)		E008.2										

Notes: "<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
IS = insufficient sample was supplied for analysis

TABLE 8
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - VAC
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	VOLATILE AROMATIC COMPOUNDS (VAC)														
		Benzene	Toluene	Ethylbenzene	m- & p-xylene	o-xylene	Styrene	Isopropylbenzene	n-propylbenzene	1,3,5-trimethylbenzene	sec-butylbenzene	1,2,4-trimethylbenzene	tert-butylbenzene	p-isopropyltoluene	n-butylbenzene	Naphthalene
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-10	23-May-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-23	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-32	18-Jun-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark		0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)		E016.2														

Notes: "*" Criterion not specified.

TABLE 9
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - OXYGENATED COMPOUNDS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	OXYGENATED COMPOUNDS		
		Vinyl acetate	Ethyl acetate	Tributylmethylether (TBME)
		(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<5	<0.5	<0.5
IF-10	23-May-07	<5	<0.5	<0.5
IF-23	18-Jun-07	<5	<0.5	<0.5
IF-32	18-Jun-07	<5	<0.5	<0.5
NEPM EILs		*	*	*
NEPM "A" HILs - Residential		*	*	*
Practical Quantitation Limits (Labmark)		5	0.5	0.5
Laboratory Methodology (Labmark)		E016.2		

Notes: "*" Criterion not specified.

TABLE 10
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - SULPHONATED COMPOUNDS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	SULPHONATED COMPOUNDS
		Carbon disulfide
		(mg/kg)
IF-1	23-May-07	<0.5
IF-10	23-May-07	<0.5
IF-23	18-Jun-07	<0.5
IF-32	18-Jun-07	<0.5
NEPM EILs		*
NEPM "A" HILs - Residential		*
Practical Quantitation Limits (Labmark)		0.5
Laboratory Methodology (Labmark)		E016.2

Notes: "*" Criterion not specified.

TABLE 11
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - HALOGENATED ALIPHATICS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	HALOGENATED ALIPHATICS																																	
		Dichlorodifluoromethane	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane	1,1-dichloroethene	trans-1,2-dichloroethene	1,1-dichloroethane	cis-1,2-dichloroethene	2,2-dichloropropane	Chloroform	1,1,1-trichloroethane	1,2-dichloroethane	1,1-dichloropropene	Carbon tetrachloride	Trichloroethene	1,2-dichloropropane	Dibromomethane	Bromodichloromethane	cis-1,3-dichloropropene	trans-1,3-dichloropropene	1,1,2-trichloroethane	1,3-dichloropropane	Chlorodibromomethane	Tetrachloroethene	1,2-dibromoethane	1,1,1,2-tetrachloroethane	Bromoform	1,1,2,2-tetrachloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	Hexachlorobutadiene
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-10	23-May-07	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-23	18-Jun-07	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-32	18-Jun-07	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
NEPM EILs		-	-	-	-	-	-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)		5	5	5	5	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)		E016.2																																	

Notes: "*" Criterion not specified.

TABLE 12
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - HALOGENATED AROMATICS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	HALOGENATED AROMATICS								
		Chlorobenzene	Bromobenzene	2-chlorotoluene	4-chlorotoluene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2-dichlorobenzene	1,2,4-trichlorobenzene	1,2,3-trichlorobenzene
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-23	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-32	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
NEPM EILs		*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)		E016.2								

Notes: "*" Criterion not specified.

TABLE 13
SOIL ANALYTICAL SUMMARY
ORGANOCHLORINE PESTICIDES (OCPs)
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	ORGANOCHLORINE PESTICIDES (OCPs)																		
		α–BHC	Hexachlorobenzene	β–BHC	γ–BHC (Lindane)	δ-BHC	Heptachlor	Aldrin	Heptachlor epoxide	trans-chlordane	Endosulfan I	cis-chlordane	Dieldrin	4,4–DDE	Endrin	Endosulfan II	4,4-DDD	Endosulfan sulphate	4,4-DDT	Methoxychlor
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-2	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-3	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-4	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-5	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-6	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-7	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-8	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-9	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-10	23-May-07	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-11	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-12	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-13	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-14	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-15	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-16	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-17	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-18	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-19	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-20	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-21	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-22	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-23	18-Jun-07	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-24	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-25	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-26	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-27	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-28	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-29	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-30	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-31	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-32	18-Jun-07	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-33	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-34	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-35	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-36	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-37	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-38	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-39	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-40	18-Jun-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	10	10(1)	*	50(2)	*	50(2)	10(1)	200(3)	*	*	200(3)	*	200(3)	*
Practical Quantitation Limits (Labmark)		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2
Laboratory Methodology (Labmark)		E013.2																		

Notes: "<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
"-" = Sample not analysed
(1) This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.
(2) This criterion applies to the sum of the determined concentrations of Chlordane-Trans and Chlordane-Cis.
(3) This criterion applies to the sum of the determined concentrations of DDD, DDE and DDT.

TABLE 14
SOIL ANALYTICAL SUMMARY
POLYCHLORINATED BIPHENYLS (PCB)
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	POLYCHLORINATED BIPHENYLS (PCB)						
		Arochlor 1016	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Total PCB
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
IF-23	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
IF-32	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
NEPM EILs		*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	10
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)		E013.2						

Notes: "<##" = below laboratory practical quantitation limits
"-" = sample not analysed

TABLE 15
SOIL ANALYTICAL SUMMARY
FLUORIDE AND TOTAL CYANIDE
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	Fluoride	Cyanide Total
		(mg/kg)	(mg/kg)
IF-1	23-May-07	17	<1
IF-10	23-May-07	18	<1
IF-23	18-Jun-07	16	<1
IF-32	18-Jun-07	15	<1
Draft EPAV Criteria (1)		450	50
NEPM "A" HILs - Residential		*	500 (Complexed)
			250 (Free)
Practical Quantitation Limits (LabMark)		1	1
Laboratory Methodology (LabMark)		E034.2	E040.2

Notes: (1) Draft Victorian Environment Protection Authority (EPAV) Publication 448.2 Classification of Wastes, February 2007.

"<##" denotes the concentration of the analyte was below the laboratory practical quantitation limits.

"*" Criterion not specified.

Shading indicates sample outside criteria.

TABLE 16
SOIL ANALYTICAL SUMMARY
pH
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	pH
IF-1	23-May-07	8.9
IF-2	23-May-07	8.9
IF-3	23-May-07	9.1
IF-4	23-May-07	9.3
IF-5	23-May-07	9.2
IF-6	23-May-07	9.1
IF-7	23-May-07	9.3
IF-8	23-May-07	9.3
IF-9	23-May-07	9.2
IF-10	23-May-07	9.3
IF-11	23-May-07	9.4
IF-12	23-May-07	9.3
IF-13	23-May-07	9.2
IF-14	23-May-07	9.3
IF-15	23-May-07	9.2
IF-16	23-May-07	9.3
IF-17	23-May-07	9.5
IF-18	23-May-07	9.4
IF-19	23-May-07	9.4
IF-20	23-May-07	9.3
IF-21	23-May-07	9.1
IF-22	23-May-07	9.3
IF-23	18-Jun-07	9.5
IF-24	18-Jun-07	9.3
IF-25	18-Jun-07	9.1
IF-26	18-Jun-07	9.4
IF-27	18-Jun-07	9.5
IF-28	18-Jun-07	9.4
IF-29	18-Jun-07	9.5
IF-30	18-Jun-07	9.2
IF-31	18-Jun-07	9.4
IF-32	18-Jun-07	9.4
IF-33	18-Jun-07	9.6
IF-34	18-Jun-07	9.4
IF-35	18-Jun-07	9.4
IF-36	18-Jun-07	9.5
IF-37	18-Jun-07	9.4
IF-38	18-Jun-07	9.4
IF-39	18-Jun-07	9.3
IF-40	18-Jun-07	9.5
ANZECC 1992 Background		6-8
Practical Quantitation Limits (Labmark)		0.1
Laboratory Methodology (Labmark)		E3600

Notes: Shading indicates concentrations outside the ANZECC 1992 Background range.

TABLE 17
SOIL ANALYTICAL SUMMARY
PID READINGS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	PID Reading
		(ppm)
IF-1	23-May-07	0.2
IF-2	23-May-07	1.0
IF-3	23-May-07	0.5
IF-4	23-May-07	3.1
IF-5	23-May-07	0.8
IF-6	23-May-07	1.6
IF-7	23-May-07	1.4
IF-8	23-May-07	0.0
IF-9	23-May-07	0.5
IF-10	23-May-07	0.3
IF-11	23-May-07	1.0
IF-12	23-May-07	1.1
IF-13	23-May-07	0.7
IF-14	23-May-07	0.3
IF-15	23-May-07	1.4
IF-16	23-May-07	2.5
IF-17	23-May-07	0.1
IF-18	23-May-07	0.8
IF-19	23-May-07	1.5
IF-20	23-May-07	1.8
IF-21	23-May-07	0.6
IF-22	23-May-07	0.4
IF-23	18-Jun-07	1.0
IF-24	18-Jun-07	4.2
IF-25	18-Jun-07	3.8
IF-26	18-Jun-07	1.6
IF-27	18-Jun-07	3.4
IF-28	18-Jun-07	2.6
IF-29	18-Jun-07	2.4
IF-30	18-Jun-07	3.5
IF-31	18-Jun-07	1.7
IF-32	18-Jun-07	2.6
IF-33	18-Jun-07	0.9
IF-34	18-Jun-07	1.5
IF-35	18-Jun-07	2.3
IF-36	18-Jun-07	1.9
IF-37	18-Jun-07	2.4
IF-38	18-Jun-07	0.7
IF-39	18-Jun-07	0.8
IF-40	18-Jun-07	1.8

TABLE 18
TRIP BLANK SAMPLE ANALYTICAL SUMMARY
METALS
IMPORTED FILL - BLANK SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Date	Antimony Sb	Arsenic As	Barium Ba	Beryllium Be	Boron B	Cadmium Cd	Chromium Cr	Cobalt Co	Copper Cu	Lead Pb	Manganese Mn	Molybdenum Mo	Nickel Ni	Selenium Se	Tin Sn	Vanadium V	Zinc Zn	Mercury Hg
		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
IF/TB-1	23-May-07	<5	<5	<5	<1	<10	<0.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<0.1
IF/TB-2	18-Jun-07	<5	<1	<5	<1	<10	0.1	<1	<1	1	<1	4	<1	<1	<5	<5	<1	<5	<0.1
Practical Quantitation Limits (Labmark 23-May-07)		5	5	5	1	10	0.5	5	5	5	5	5	5	5	5	5	10	5	0.1
Practical Quantitation Limits (Labmark 18-Jun-07)		5	5	5	1	10	0.1	5	5	1	5	1	5	5	5	5	10	5	0.1
Laboratory Methodology (Labmark)		E022.1/E030.1																	E026.1

Notes: "<##" = below laboratory practical quantitation limits.
"*" = criterion not specified.
Shading indicates concentrations above laboratory practical quantitation limits.

TABLE 19
SOIL ANALYTICAL SUMMARY
METALS
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Depth (m)	Sample Date	Antimony Sb (mg/kg)	Arsenic As (mg/kg)	Barium Ba (mg/kg)	Beryllium Be (mg/kg)	Boron B (mg/kg)	Cadmium Cd (mg/kg)	Chromium Cr (mg/kg)	Cobalt Co (mg/kg)	Copper Cu (mg/kg)	Lead Pb (mg/kg)	Manganese Mn (mg/kg)	Molybdenum Mo (mg/kg)	Nickel Ni (mg/kg)	Selenium Se (mg/kg)	Tin Sn (mg/kg)	Vanadium V (mg/kg)	Zinc Zn (mg/kg)	Mercury Hg (mg/kg)
IF-5	-	23-May-07	<1	9	170	<1	7	<0.1	27	45	19	10	690	<1	40	<2	<1	120	11	<0.05
IF/QS-1			<1	1	200	<1	<5	<0.1	20	17	8	9	170	<1	10	<2	<1	52	7	<0.05
Relative Percentage Difference (RPD)			**<50%**	**160%**	**16%**	**<50%**	**>33%**	**<50%**	**30%**	**90%**	**81%**	**11%**	**121%**	**<50%**	**120%**	**<50%**	**<50%**	**79%**	**44%**	**<50%**
IF/QS-1A			<5	<5	240	<1	50	<1	28	7	7	9	91	<2	14	<5	<5	29	8	<0.1
Relative Percentage Difference (RPD)			**<50%**	**>57%**	**34%**	**<50%**	**151%**	**<50%**	**4%**	**146%**	**92%**	**11%**	**153%**	**<50%**	**96%**	**<50%**	**<50%**	**122%**	**32%**	**<50%**
IF-35	-	18-Jun-07	<1	2	353	1	7	<0.1	27	27	10	10	565	<1	20	<2	<1	60	11	<0.05
IF/QS-3			<1	2	338	1	27	<0.1	70	27	14	12	428	<1	35	<2	<1	73	32	<0.05
Relative Percentage Difference (RPD)			**<50%**	**0%**	**4%**	**0%**	**118%**	**<50%**	**89%**	**0%**	**33%**	**18%**	**28%**	**<50%**	**55%**	**<50%**	**<50%**	**20%**	**98%**	**<50%**
IF/QS-3A			<5	<5	300	1	60	<1	38	14	10	9	250	<2	17	<5	<5	46	15	<0.1
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**16%**	**0%**	**158%**	**<50%**	**34%**	**63%**	**0%**	**11%**	**77%**	**<50%**	**16%**	**<50%**	**<50%**	**26%**	**31%**	**<50%**
NEPM EILs			*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	*	60	*	*	60	200	1
NEPM "A" HILs - Residential			*	100	*	20	3000	20	100 (CrVI) 12% (CrIII)	100	1,000	300	1500	*	600	*	*	*	7,000	15
ANZECC 1992 Environmental Criteria			20	20	*	*	*	3	50	*	60	300	*	*	*	*	50	60	200	1
NEPM Background ranges			4-44^	1-50	100-300	*	*	1	5-1000	1-40	2-100	2-200	850	*	5-500	*	1-25^	5-500	10-300	0.03
Practical Quantitation Limits (Labmark)			1	1	5	1	5	0.1	1	1	2	2	5	1	1	2	1	5	5	0.05
Laboratory Methodology				E5910																E5950
Practical Quantitation Limits (ALS)			5	5	10	1	50	1	2	2	5	5	5	2	2	5	5	5	5	0.1
Laboratory Methodology (ALS)			EG005T																	EG035T

Notes: "*" Criterion not specified.
"^" ANZECC 1992 Background Range given in absence of NEPM Background Range.
Light grey shading indicates concentrations above NEPM EILs (divided by two)
Dark grey shading indicates concentrations above NEPM "A" HILs (divided by two

TABLE 20
SOIL ANALYTICAL SUMMARY
BTEX & TPH
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Depth	Sample Date	BTEX				TPH			
			Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	C_6-C_9 (mg/kg)	C_{10}-C_{14} (mg/kg)	C_{15}-C_{28} (mg/kg)	C_{29}-C_{36} (mg/kg)
IF-5	-	23-May-07	-	-	-	-	<10	<50	<100	<100
IF/QS-1			-	-	-	-	<10	<50	<100	<100
Relative Percentage Difference (RPD)			**-**	**-**	**-**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
IF/QS-1A			-	-	-	-	<10	<50	<100	<100
Relative Percentage Difference (RPD)			**-**	**-**	**-**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
IF-35	-	18-Jun-07	-	-	-	-	<10	<50	<100	<100
IF/QS-3			-	-	-	-	<10	<50	<100	<100
Relative Percentage Difference (RPD)			**-**	**-**	**-**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
IF/QS-3A			-	-	-	-	<10	<50	<100	<100
Relative Percentage Difference (RPD)			**-**	**-**	**-**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
NSW EPA Criteria (1)			1	1.4	3.1	14	65	1,000		
Practical Quantitation Limits (Labmark)			0.2	1	1	3	10	50	100	100
Laboratory Methodology (Labmark)			E1010				E1230	E1221		
Practical Quantitation Limits (ALS)			0.2	1	1	4	10	50	100	100
Laboratory Methodology (ALS)			E1010				EP080	EP071		

Notes:

"*" = criterion not specified.
"**" sample not analysed due to laboratory error
"<##" = below laboratory practical quantitation limits
"-" denotes sample not analysed.
Shading indicates RPD values >50%.

TABLE 21
SOIL ANALYTICAL SUMMARY
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Depth (m)	Sample Date	POLYCYCLIC AROMATIC HYDROCARBONS														
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)Anthracene	Chrysene	Benzo(b+k)Fluoranthene	Benzo(a)Pyrene	Indeno(1,2,3,-cd)Pyrene	DiBenzo(a,h)Anthracene	Benzo(g,h,i)Perylene
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-5	-	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
IF/QS-1			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
IF/QS-1A			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
IF-35	-	18-Jun-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
IF/QS-3			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
IF/QS-3A			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	*	*	*	*	*	*	1	*	*	*
Practical Quantitation Limits (Labmark)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)			E007.2														
Practical Quantitation Limits (ALS)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5
Laboratory Methodology (ALS)			EP075(SIM)B														

Notes:
"<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
"-" denotes sample not analysed.
Shading indicates RPD values >50%.

TABLE 22
SOIL ANALYTICAL SUMMARY
PHENOLS
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Depth (m)	Sample Date	PHENOLIC GROUPS											
			Phenol	2-chlorophenol	2-methylphenol	3-&4-methylphenol	2-nitrophenol	2,4-dimethylphenol	2,4-dichlorophenol	2,6-Dichlorophenol	4-chloro-3-methylphenol	2,4,6-trichlorophenol	2,4,5-trichlorophenol	Pentachlorophenol
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-20	-	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1
IF/QS-2			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
IF/QS-2A			<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<2
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			8,500	*	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	0.5	0.5	0.5	1.0
Laboratory Methodology (Labmark)			E008.2											
Practical Quantitation Limits (ALS)			0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.0
Laboratory Methodology (ALS)			EP075(SIM)A											

Notes:
"<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
"-" denotes sample not analysed.
Shading indicates RPD values >50%.

TABLE 23
SOIL ANALYTICAL SUMMARY
ORGANOCHLORINE PESTICIDES (OCPs)
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	a--BHC	Hexachlorobenzene	g--BHC	y--BHC (Lindane)	d-BHC	Heptachlor	Aldrin	Heptachlor epoxide	trans-chlordane	Endosulfan I	cis-chlordane	Dieldrin	4,4--DDE	Endrin	Endosulfan II	4,4-DDD	Endosulfan sulphate	4,4-DDT	Endrin ketone	Endrin aldehyde	Methoxychlor
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-20	-	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.2
IF/QS-2			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.2
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**-**	**<50%**
IF/QS-2A			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.05	<0.05	<0.2
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**-**	**<50%**
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	10	10(1)	10(1)	*	50(2)	50(2)	*	*	*	*	200(3)	200(3)	200(3)	*	*	*
Practical Quantitation Limits (Labmark)			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-	-	0.05
Laboratory Methodology (Labmark)			E013.2																				
Practical Quantitation Limits (ALS)			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Laboratory Methodology (ALS)			EP068A																				

Notes:

"<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
(1) This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.
(2) This criterion applies to the sum of the determined concentrations of Chlordane-Trans and Chlordane-Cis.
(3) This criterion applies to the sum of the determined concentrations of DDD, DDE and DDT.

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

No. 13542.

Accredited for compliance with ISO/IEC 17025. The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

AUSTRALIAN QUARANTINE AND INSPECTION SERVICE

SYDNEY License No. N0356.

Quarantine Approved premises criteria 5.1 for quarantine containment level 1 (QCI) facilities. Class five criteria cover premises utilised for research, analysis,and/or testing of biological material, soil, animal, plant and human products.

FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:	E032113
Client Name:	OTEK Australia Pty Ltd
Client Reference:	Werribee Area 4
Contact Name:	Tom Santwyk-Anderson
Chain of Custody No:	na
Sample Matrix:	SOIL & WATER

Cover Page 1 of 4
plus Sample Results

Date Received: 23/05/2007
Date Reported: 31/05/2007

This Final Certificate of Analysis consists of sample results, DQI's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

QUALITY ASSURANCE CRITERIA

Accuracy:	matrix spike:	1 in first 5-20, then 1 every 20 samples
	lcs, crm, method:	1 per analytical batch
	surrogate spike:	addition per target organic method
Precision:	laboratory duplicate:	1 in first 5-10, then 1 every 10 samples
	laboratory triplicate:	re-extracted & reported when duplicate RPD values exceed acceptance criteria
Holding Times:	soils, waters:	Refer to LabMark Preservation & THT table VOC's 14 days water / soil VAC's 7 days water or 14 days acidified VAC's 14 days soil SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements Mercury 28 days
Confirmation:	target organic analysis:	GC/MS, or confirmatory column
Sensitivity:	EQL:	Typically 2-5 x Method Detection Limit (MDL)

QUALITY CONTROL GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy:	spike, lcs, crm surrogate:	general analytes 70% - 130% recovery phenol analytes 50% - 130% recovery organophosphorous pesticide analytes 60% - 130% recovery phenoxy acid herbicides 50% - 130% recovery
	anion/cation bal:	+/- 10% (0-3 meq/l), +/- 5% (>3 meq/l)
Precision:	method blank:	not detected >95% of the reported EQL
	duplicate lab RPD (metals):	0-30% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)
	duplicate lab RPD:	0-50% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)

QUALITY CONTROL ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy:	spike, lcs, crm surrogate:	analyte specific recovery data <3xsd of historical mean
Uncertainty:	spike, lcs:	measurement calculated from historical analyte specific control charts

RESULT ANNOTATION

DQO:	Data Quality Objective	s:	matrix spike recovery	p:	pending
DQI:	Data Quality Indicator	d:	laboratory duplicate	lcs:	laboratory control sample
EQL:	Estimated Quantitation Limit	t:	laboratory triplicate	crm:	certified reference material
- - :	not applicable	r:	RPD relative % difference	mb:	method blank

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This document is issued in accordance with NATA's accreditation requirements.

NEPC GUIDELINE COMPLIANCE - DQO

1. GENERAL

A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.

B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.

C. Laboratory QA/QC samples are specific to this project.

D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.

E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.

F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.

G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.

H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.

I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

2. CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

A. SRN issued to client upon sample receipt & login verification.

B. Preservation & sampling date details specified on COC and SRN, unless noted.

C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

3. NATA ACCREDITED METHODS

A. NATA accreditation held for each method and sample matrix type reported, unless noted below.

B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.

C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments.

LabMark PTY LTD ABN 27 079 798 397
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* Telephone: (02) 9476 6533 * Fax: (02) 9476 8219 * Telephone: (03) 9686 8344 * Fax: (03) 9686 7344

4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix: **SOIL**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	Fluoride	2	0	0%	0	0	0%
2	Total Cyanide	2	0	0%	0	0	0%
3	Petroleum Hydrocarbons (TPH)	23	3	13%	0	2	9%
7	Volatile TPH by P&T (vTPH)	23	3	13%	0	2	9%
9	Polyaromatic Hydrocarbons (PAH)	23	3	13%	0	2	9%
13	Phenols by GC/MS	23	3	13%	0	2	9%
17	Volatile Organic Compounds (VOC)	2	0	0%	0	0	0%
20	Organochlorine Pesticides (OC)	23	3	13%	0	2	9%
24	Polychlorinated Biphenyls (PCB)	2	0	0%	0	0	0%
25	Semivolatile Chlorinated Hydrocarbons	2	0	0%	0	0	0%
27	Acid extractable mercury	23	3	13%	0	2	9%
30	Acid extractable metals	23	3	13%	0	2	9%
34	pH in soil	22	3	14%	0	0	0%
36	Moisture	24	--	--	--	--	--

Matrix: **WATER**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
26	Unfiltered metals	1	0	0%	0	0	0%
29	Unfiltered metals	1	0	0%	0	0	0%

GLOSSARY:

#d	number of discrete duplicate extractions/analyses performed.
%d-ratio	NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).
#t	number of triplicate extractions/analyses performed.
#s	number of spiked samples analysed.
%s-ratio	USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

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5. ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by LabMark Environmental Melbourne, NATA accreditation No. 13542, Corporate Site No. 15897., unless indicated below.
B. The following tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, Corporate Site No. 13535. :- Fluoride, Total Cyanide
C. Matrix spike recovery Method No:- E022.2 Lab-ID 90226(METALS - Antimony) reported 61%R, lcs reported 94%R.
D. Matrix spike recovery Method No:- E022.2 Lab-ID 90226(METALS - Arsenic) reported 69%R, lcs reported 97%R.
E. Matrix spike recovery Method No:- E022.2 Lab-ID 90226(METALS - Selenium) reported 48%R, lcs reported 95%R.
F. Matrix spike recovery Method No:- E022.2 Lab-ID 90225(METALS - Selenium) reported 61%R, lcs reported 95%R.
G. Matrix spike recovery Method No:- E022.2 Lab-ID 90225(METALS - Nickel) reported 135%R, lcs reported 98%R.
H. Matrix spike recovery Method No:- E022.2 Lab-ID 90225(METALS - Cobolt) reported 148%R, lcs reported 103%R.

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

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Laboratory Report No: E032113
Client Name: OTEK Australia Pty Ltd
Contact Name: Tom Santwyk-Anderson
Client Reference Werribee Area 4 3106004

Date: 31/05/07
This report supercedes reports issued on: 30/05/07

Final
Certificate
of Analysis

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		30/5/07	30/5/07	28/5/07	28/5/07						
Method : E034.2/E045.2											
Fluoride	**EQL**										
Fluoride	1	17	18	79%	<1						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		30/5/07	30/5/07	25/5/07	25/5/07						
Method : E040.2/E054.2											
Total Cyanide	**EQL**										
Total Cyanide	1	<1	<1	116%	<1						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E040.2/E054.2: Caustic extract followed by strong acid distillion. Analysis by colour.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Final
Certificate of Analysis

Laboratory Identification		90231	90232	90233	90234	90235	90236	90237	90238	90239	90240
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**90241**	**90242**	**90243**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	--	<50	--	<50	--	--
C15 - C28 Fraction	100	<100	<100	<100	<100	--	<100	--	<100	--	87%
C29 - C36 Fraction	100	<100	<100	<100	<100	--	<100	--	<100	--	--
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**90226s**	**lcs**	**mb**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07							
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	--	--	<50							
C15 - C28 Fraction	100	98%	88%	<100							
C29 - C36 Fraction	100	--	--	<100							
Sum of TPH C10 - C36	--	--	--	--							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	28/5/07
Method : E029.2/E016.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E029.2/E016.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

Laboratory Identification		90241	90242	90243	90222d	90222r	90223d	90223r	90224d	90224r	90225s
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	--	29/5/07	--	29/5/07	--	30/5/07
Method : E029.2/E016.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	--	<10	--	<10	--	81%

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

Laboratory Identification		90226s	lcs	mb							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		30/5/07	28/5/07	28/5/07							
Method : E029.2/E016.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	79%	92%	<10							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		29/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of reported PAHs	--	--	--	--	--	--	--	--	--	--	--
2-FBP (Surr @ 5mg/kg)	--	*112%*	*94%*	*91%*	*102%*	*98%*	*91%*	*93%*	*92%*	*92%*	*98%*
TP-d14 (Surr @ 5mg/kg)	--	*96%*	*100%*	*96%*	*107%*	*102%*	*99%*	*98%*	*96%*	*98%*	*90%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07	29/5/07
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of reported PAHs	--	--	--	--	--	--	--	--	--	--	--
2-FBP (Surr @ 5mg/kg)	--	*98%*	*95%*	*90%*	*89%*	*94%*	*96%*	*92%*	*93%*	*90%*	*93%*
TP-d14 (Surr @ 5mg/kg)	--	*106%*	*102%*	*98%*	*97%*	*103%*	*107%*	*101%*	*101%*	*98%*	*99%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90241**	**90242**	**90243**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	96%
Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	84%
Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	92%
Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	97%
Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	91%
Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	92%
Fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	89%
Pyrene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	92%
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	104%
Chrysene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	91%
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	--	<1	--	<1	--	87%
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	95%
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	85%
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	89%
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	86%
Sum of reported PAHs	--	--	--	--	--	--	--	--	--	--	--
2-FBP (Surr @ 5mg/kg)	--	*88%*	*99%*	*90%*	*93%*	*1%*	*90%*	*1%*	*90%*	*13%*	*95%*
TP-d14 (Surr @ 5mg/kg)	--	*95%*	*106%*	*100%*	*95%*	*5%*	*95%*	*1%*	*93%*	*14%*	*101%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90226s**	**lcs**	**mb**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07							
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	98%	106%	<0.5							
Acenaphthylene	0.5	89%	95%	<0.5							
Acenaphthene	0.5	99%	105%	<0.5							
Fluorene	0.5	101%	107%	<0.5							
Phenanthrene	0.5	96%	102%	<0.5							
Anthracene	0.5	100%	107%	<0.5							
Fluoranthene	0.5	95%	102%	<0.5							
Pyrene	0.5	95%	103%	<0.5							
Benz(a)anthracene	0.5	111%	112%	<0.5							
Chrysene	0.5	101%	105%	<0.5							
Benzo(b)&(k)fluoranthene	1	93%	95%	<1							
Benzo(a) pyrene	0.5	93%	112%	<0.5							
Indeno(1,2,3-c,d)pyrene	0.5	98%	113%	<0.5							
Dibenz(a,h)anthracene	0.5	97%	117%	<0.5							
Benzo(g,h,i)perylene	0.5	89%	95%	<0.5							
Sum of reported PAHs	--	--	--	--							
2-FBP (Surr @ 5mg/kg)	--	*99%*	*102%*	*103%*							
TP-d14 (Surr @ 5mg/kg)	--	*105%*	*108%*	*114%*							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		29/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-&4-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitrophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chloro-3-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum of reported phenols	--	--	--	--	--	--	--	--	--	--	--
2-FP (Surr @ 5mg/kg)	--	*100%*	*99%*	*95%*	*109%*	*101%*	*94%*	*98%*	*94%*	*94%*	*95%*
Phenol-d5 (Surr @ 5mg/kg)	--	*122%*	*93%*	*93%*	*105%*	*96%*	*93%*	*91%*	*89%*	*95%*	*100%*
2,4,6-TBP (Surr @ 5mg/kg)	--	*94%*	*93%*	*85%*	*97%*	*87%*	*81%*	*81%*	*75%*	*82%*	*84%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07	29/5/07
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-&4-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitrophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chloro-3-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum of reported phenols	--	--	--	--	--	--	--	--	--	--	--
2-FP (Surr @ 5mg/kg)	--	*104%*	*98%*	*96%*	*92%*	*98%*	*100%*	*93%*	*99%*	*90%*	*98%*
Phenol-d5 (Surr @ 5mg/kg)	--	*95%*	*93%*	*92%*	*88%*	*94%*	*99%*	*91%*	*91%*	*87%*	*89%*
2,4,6-TBP (Surr @ 5mg/kg)	--	*94%*	*88%*	*85%*	*85%*	*88%*	*88%*	*82%*	*88%*	*87%*	*92%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90241**	**90242**	**90244**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-2	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	97%
2-chlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	93%
2-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	102%
3-&4-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	98%
2-nitrophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	106%
2,4-dimethylphenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	106%
2,4-dichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	95%
4-chloro-3-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	98%
2,4,6-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	88%
2,4,5-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	94%
Pentachlorophenol	1	<1	<1	<1	<1	--	<1	--	<1	--	122%
Sum of reported phenols	--	--	--	--	--	--	--	--	--	--	--
2-FP (Surr @ 5mg/kg)	--	*93%*	*100%*	*100%*	*98%*	*1%*	*94%*	*1%*	*93%*	*16%*	*100%*
Phenol-d5 (Surr @ 5mg/kg)	--	*86%*	*99%*	*100%*	*94%*	*1%*	*92%*	*1%*	*91%*	*14%*	*97%*
2,4,6-TBP (Surr @ 5mg/kg)	--	*80%*	*87%*	*89%*	*85%*	*9%*	*89%*	*5%*	*81%*	*18%*	*95%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90226s**	**lcs**	**mb**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07							
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	101%	108%	<0.5							
2-chlorophenol	0.5	98%	102%	<0.5							
2-methylphenol	0.5	94%	106%	<0.5							
3-&4-methylphenol	0.5	108%	120%	<0.5							
2-nitrophenol	0.5	107%	115%	<0.5							
2,4-dimethylphenol	0.5	108%	116%	<0.5							
2,4-dichlorophenol	0.5	100%	108%	<0.5							
4-chloro-3-methylphenol	0.5	99%	109%	<0.5							
2,4,6-trichlorophenol	0.5	95%	104%	<0.5							
2,4,5-trichlorophenol	0.5	95%	99%	<0.5							
Pentachlorophenol	1	125%	128%	<1							
Sum of reported phenols	--	--	--	--							
2-FP (Surr @ 5mg/kg)	--	*99%*	*103%*	*105%*							
Phenol-d5 (Surr @ 5mg/kg)	--	*101%*	*101%*	*104%*							
2,4,6-TBP (Surr @ 5mg/kg)	--	*101%*	*110%*	*93%*							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		28/5/07	28/5/07	25/5/07	25/5/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
Volatile Aromatic Compounds											
Benzene	0.5	<0.5	<0.5	94%	<0.5						
Toluene	0.5	<0.5	<0.5	99%	<0.5						
Ethylbenzene	0.5	<0.5	<0.5	104%	<0.5						
m- & p-xylene	1	<1	<1	104%	<1						
o-xylene	0.5	<0.5	<0.5	105%	<0.5						
Styrene	0.5	<0.5	<0.5	103%	<0.5						
Isopropylbenzene	0.5	<0.5	<0.5	107%	<0.5						
n-propylbenzene	0.5	<0.5	<0.5	104%	<0.5						
1,3,5-trimethylbenzene	0.5	<0.5	<0.5	103%	<0.5						
sec-butylbenzene	0.5	<0.5	<0.5	103%	<0.5						
1,2,4-trimethylbenzene	0.5	<0.5	<0.5	102%	<0.5						
tert-butylbenzene	0.5	<0.5	<0.5	104%	<0.5						
p-isopropyltoluene	0.5	<0.5	<0.5	100%	<0.5						
n-butylbenzene	0.5	<0.5	<0.5	102%	<0.5						
Naphthalene	0.5	<0.5	<0.5	112%	<0.5						
Halogenated Aliphatics											
Dichlorodifluoromethane	5	<5	<5	92%	<5						
Chloromethane	5	<5	<5	92%	<5						
Vinyl chloride	5	<5	<5	89%	<5						
Bromomethane	5	<5	<5	105%	<5						
Chloroethane	5	<5	<5	95%	<5						
Trichlorofluoromethane	5	<5	<5	95%	<5						
1,1-dichloroethene	0.5	<0.5	<0.5	95%	<0.5						
trans-1,2-dichloroethene	0.5	<0.5	<0.5	93%	<0.5						
1,1-dichloroethane	0.5	<0.5	<0.5	93%	<0.5						
cis-1,2-dichloroethene	0.5	<0.5	<0.5	94%	<0.5						

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		28/5/07	28/5/07	25/5/07	25/5/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
2,2-dichloropropane	0.5	<0.5	<0.5	93%	<0.5						
Chloroform	0.5	<0.5	<0.5	94%	<0.5						
1,1,1-trichloroethane	0.5	<0.5	<0.5	96%	<0.5						
1,2-dichloroethane	0.5	<0.5	<0.5	92%	<0.5						
1,1-dichloropropene	0.5	<0.5	<0.5	96%	<0.5						
Carbon tetrachloride	0.5	<0.5	<0.5	95%	<0.5						
Trichloroethene	0.5	<0.5	<0.5	93%	<0.5						
1,2-dichloropropane	0.5	<0.5	<0.5	93%	<0.5						
Dibromomethane	0.5	<0.5	<0.5	85%	<0.5						
Bromodichloromethane	0.5	<0.5	<0.5	99%	<0.5						
cis-1,3-dichloropropene	0.5	<0.5	<0.5	109%	<0.5						
trans-1,3-dichloropropene	0.5	<0.5	<0.5	89%	<0.5						
1,1,2-trichloroethane	0.5	<0.5	<0.5	93%	<0.5						
1,3-dichloropropane	0.5	<0.5	<0.5	94%	<0.5						
Chlorodibromomethane	0.5	<0.5	<0.5	92%	<0.5						
Tetrachloroethene	0.5	<0.5	<0.5	95%	<0.5						
1,2-dibromoethane	0.5	<0.5	<0.5	95%	<0.5						
1,1,1,2-tetrachloroethane	0.5	<0.5	<0.5	102%	<0.5						
Bromoform	0.5	<0.5	<0.5	99%	<0.5						
1,1,2,2-tetrachloroethane	0.5	<0.5	<0.5	97%	<0.5						
1,2,3-trichloropropane	0.5	<0.5	<0.5	99%	<0.5						
1,2-dibromo-3-chloropropane	0.5	<0.5	<0.5	101%	<0.5						
Hexachlorobutadiene	0.5	<0.5	<0.5	103%	<0.5						
Halogenated Aromatics											
Chlorobenzene	0.5	<0.5	<0.5	105%	<0.5						
Bromobenzene	0.5	<0.5	<0.5	101%	<0.5						
2-chlorotoluene	0.5	<0.5	<0.5	104%	<0.5						

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		28/5/07	28/5/07	25/5/07	25/5/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
4-chlorotoluene	0.5	<0.5	<0.5	101%	<0.5						
1,3-dichlorobenzene	0.5	<0.5	<0.5	100%	<0.5						
1,4-dichlorobenzene	0.5	<0.5	<0.5	101%	<0.5						
1,2-dichlorobenzene	0.5	<0.5	<0.5	99%	<0.5						
1,2,4-trichlorobenzene	0.5	<0.5	<0.5	111%	<0.5						
1,2,3-trichlorobenzene	0.5	<0.5	<0.5	114%	<0.5						
Oxygenated Compounds											
Vinyl acetate	5	<5	<5	91%	<5						
Ethyl acetate	0.5	<0.5	<0.5	91%	<0.5						
tert-butylmethylether (TBME)	0.5	<0.5	<0.5	93%	<0.5						
Sulphonated Compounds											
Carbon disulfide	0.5	<0.5	<0.5	92%	<0.5						
Surrogate Standards											
BCP (Surr @ 20mg/kg)	--	*80%*	*90%*	*93%*	*93%*						
DCFB (Surr @ 20mg/kg)	--	*73%*	*74%*	*98%*	*90%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/MS. (NB) Acetone and Dichloromethane not reported unless requested.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
DBC (Surr @ 0.2mg/kg)	--	*109%*	*99%*	*101%*	*101%*	*99%*	*104%*	*103%*	*101%*	*103%*	*104%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
DBC (Surr @ 0.2mg/kg)	--	*105%*	*104%*	*105%*	*106%*	*104%*	*106%*	*107%*	*104%*	*108%*	*102%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90241**	**90242**	**90244**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-2	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	117%
Hexachlorobenzene	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	107%
b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	118%
g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	118%
d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	109%
Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	106%
Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	109%
Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	111%
trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	110%
Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	112%
cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	111%
Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	108%
4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	104%
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	109%
Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	112%
4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	117%
Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	125%
4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	--	<0.2	--	108%
Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	--	<0.2	--	111%
DBC (Surr @ 0.2mg/kg)	--	*99%*	*104%*	*89%*	*99%*	*0%*	*101%*	*0%*	*101%*	*0%*	*101%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90226s**	**lcs**	**mb**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07							
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	115%	115%	<0.05							
Hexachlorobenzene	0.05	106%	107%	<0.05							
b-BHC	0.05	115%	117%	<0.05							
g-BHC (Lindane)	0.05	115%	117%	<0.05							
d-BHC	0.05	107%	106%	<0.05							
Heptachlor	0.05	105%	102%	<0.05							
Aldrin	0.05	109%	111%	<0.05							
Heptachlor epoxide	0.05	110%	107%	<0.05							
trans-chlordane	0.05	109%	112%	<0.05							
Endosulfan I	0.05	112%	111%	<0.05							
cis-chlordane	0.05	111%	113%	<0.05							
Dieldrin	0.05	107%	108%	<0.05							
4,4-DDE	0.05	102%	102%	<0.05							
Endrin	0.05	108%	110%	<0.05							
Endosulfan II	0.05	110%	111%	<0.05							
4,4-DDD	0.05	107%	112%	<0.05							
Endosulfan sulphate	0.05	122%	129%	<0.05							
4,4-DDT	0.2	106%	110%	<0.2							
Methoxychlor	0.2	108%	112%	<0.2							
DBC (Surr @ 0.2mg/kg)	--	*99%*	*99%*	*101%*							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		28/5/07	29/5/07	28/5/07	28/5/07						
Method : E013.2											
Polychlorinated Biphenyls (PCB)	**EQL**										
Arochlor 1016	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1232	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1242	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1248	0.5	<0.5	<0.5	96%	<0.5						
Arochlor 1254	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1260	0.5	<0.5	<0.5	--	<0.5						
Sum of reported PCBs	--	--	--	--	--						
DBC (Surr @ 0.2mg/kg)	--	*109%*	*104%*	*101%*	*101%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07						
Method : E017.2											
Semivolatile Chlorinated Hydrocarbons	**EQL**										
1,3-dichlorobenzene	0.5	<0.5	<0.5	105%	<0.5						
1,4-dichlorobenzene	0.5	<0.5	<0.5	112%	<0.5						
1,2-dichlorobenzene	0.5	<0.5	<0.5	106%	<0.5						
Hexachloroethane	0.5	<0.5	<0.5	99%	<0.5						
1,2,4-trichlorobenzene	0.5	<0.5	<0.5	102%	<0.5						
Hexachloropropene	0.5	<0.5	<0.5	97%	<0.5						
Hexachlorobutadiene	0.5	<0.5	<0.5	103%	<0.5						
Hexachlorocyclopentadiene	2	<2	<2	104%	<2						
Pentachlorobenzene	0.5	<0.5	<0.5	99%	<0.5						
Hexachlorobenzene	0.5	<0.5	<0.5	108%	<0.5						
NB-d5 (Surr @ 5mg/kg)	--	*95%*	*81%*	*95%*	*88%*						
2-FBP (Surr @ 5mg/kg)	--	*112%*	*98%*	*102%*	*105%*						
TP-d14 (Surr @ 5mg/kg)	--	*96%*	*90%*	*96%*	*92%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E017.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90245**	**lcs**	**mb**							
Sample Identification		IF/TB-1	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		23/5/07	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		25/5/07	25/5/07	25/5/07							
Method : E026.1											
Unfiltered metals	**EQL**										
Mercury	0.1	<0.1	107%	<0.1							

Results expressed in ug/l unless otherwise specified

Comments:

E026.1: 25ml digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		90220	90222	90223	90224	90225	90226	90227	90228	90229	90230
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		90231	90232	90233	90234	90235	90236	90237	90238	90239	90240
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		90241	90242	90243	90222d	90222r	90223d	90223r	90224d	90224r	90225s
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	--	29/5/07	--	29/5/07	--	29/5/07
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	103%

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		90226s	crm	lcs	mb						
Sample Identification		QC	QC	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		--	--	--	--						
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07						
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07						
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	102%	105%	99%	<0.05						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		**90245**	**lcs**	**mb**							
Sample Identification		IF/TB-1	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		23/5/07	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		25/5/07	25/5/07	25/5/07							
Method : E022.1/E030.1											
Unfiltered metals	**EQL**										
Antimony	5	<5	95%	<5							
Arsenic	5	<5	95%	<5							
Barium	5	<5	96%	<5							
Beryllium	1	<1	87%	<1							
Boron	10	<10	90%	<10							
Cadmium	0.5	<0.5	88%	<0.5							
Chromium	5	<5	97%	<5							
Cobalt	5	<5	97%	<5							
Copper	5	<5	100%	<5							
Lead	5	<5	104%	<5							
Manganese	5	<5	97%	<5							
Molybdenum	5	<5	98%	<5							
Nickel	5	<5	93%	<5							
Selenium	5	<5	96%	<5							
Tin	5	<5	90%	<5							
Vanadium	10	<10	95%	<10							
Zinc	5	<5	97%	<5							

Results expressed in ug/l unless otherwise specified

Comments:

E022.1/E030.1: 25ml digested in nitric/hydrochloric acid. Analysis by ICP-MS/ICP-OES.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	1	1	1	2	1	9	<1	2	2	1	2
Barium	5	140	140	180	250	170	150	160	130	160	100
Beryllium	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	5	7	6	7	8	7	8	7	6	7	6
Cadmium	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	1	16	14	18	16	27	15	15	18	18	16
Cobalt	1	16	10	16	11	45	16	10	16	12	11
Copper	2	7	6	8	7	19	6	6	8	9	8
Lead	2	9	9	10	9	10	9	9	9	8	8
Manganese	5	170	160	250	140	690	130	77	180	160	140
Molybdenum	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	1	11	9	14	9	40	8	11	16	11	9
Selenium	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2
Vanadium	5	--	35	49	46	120	38	51	48	51	--
Zinc	5	7	5	6	6	11	5	<5	6	6	6

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	1	1	1	<1	12	<1	<1	<1	2	<1	2
Barium	5	140	260	140	290	140	160	210	190	300	360
Beryllium	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	5	6	6	6	8	8	7	7	7	5	8
Cadmium	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	1	18	18	18	36	17	15	22	21	18	22
Cobalt	1	23	16	19	32	10	9	13	28	12	18
Copper	2	7	7	7	17	6	5	6	10	6	8
Lead	2	9	9	9	10	8	7	9	12	9	10
Manganese	5	110	160	320	320	96	50	150	220	290	240
Molybdenum	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	1	14	15	12	33	8	5	11	14	11	14
Selenium	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	5	43	42	39	150	36	32	36	57	37	55
Zinc	5	6	6	6	10	6	5	7	7	5	8

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**90241**	**90242**	**90243**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	<1	<1	<1	<1	--	<1	--	<1	--	75%
Arsenic	1	1	1	1	1	0%	2	0%	1	0%	95%
Barium	5	130	210	200	130	7%	170	6%	260	4%	#
Beryllium	1	<1	<1	<1	<1	--	<1	--	<1	--	102%
Boron	5	7	7	<5	6	0%	6	15%	8	0%	98%
Cadmium	0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	--	<0.1	--	92%
Chromium	1	18	20	20	14	0%	17	6%	18	12%	126%
Cobalt	1	8	10	17	9	11%	16	0%	11	0%	148%
Copper	2	7	7	8	6	0%	7	13%	7	0%	113%
Lead	2	9	9	9	9	0%	10	0%	9	0%	103%
Manganese	5	31	120	170	160	0%	240	4%	140	0%	#
Molybdenum	1	<1	<1	<1	<1	--	<1	--	<1	--	79%
Nickel	1	8	11	10	9	0%	13	7%	10	11%	135%
Selenium	2	<2	<2	<2	<2	--	<2	--	<2	--	61%
Tin	1	<1	<1	<1	<1	--	<1	--	<1	--	85%
Vanadium	5	48	49	52	35	0%	47	4%	45	2%	#
Zinc	5	6	7	7	6	18%	5	18%	6	0%	105%

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**90226s**	**crm**	**lcs**	**mb**						
Sample Identification		QC	QC	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		--	--	--	--						
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07						
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07						
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	61%	--	94%	<1						
Arsenic	1	69%	107%	97%	<1						
Barium	5	#	88%	96%	<5						
Beryllium	1	102%	93%	88%	<1						
Boron	5	104%	--	89%	<5						
Cadmium	0.1	86%	97%	97%	<0.1						
Chromium	1	109%	102%	100%	<1						
Cobalt	1	95%	101%	103%	<1						
Copper	2	98%	100%	102%	<2						
Lead	2	94%	95%	98%	<2						
Manganese	5	#	98%	101%	<5						
Molybdenum	1	73%	100%	98%	<1						
Nickel	1	101%	101%	98%	<1						
Selenium	2	48%	103%	95%	<2						
Tin	1	84%	83%	96%	<1						
Vanadium	5	79%	103%	103%	<5						
Zinc	5	101%	97%	94%	<5						

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		90220	90222	90223	90224	90225	90226	90227	90228	90229	90230
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		25/5/07	25/5/07	25/5/07	25/5/07	28/5/07	28/5/07	28/5/07	28/5/07	25/5/07	25/5/07
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	8.9	8.9	9.1	9.3	9.2	9.1	9.3	9.3	9.2	9.3

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		90231	90232	90233	90234	90235	90236	90237	90238	90239	90240
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	28/5/07	28/5/07	28/5/07
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	9.4	9.3	9.2	9.3	9.2	9.3	9.5	9.4	9.4	9.3

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		**90241**	**90242**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**		
Sample Identification		IF-21	IF-22	QC	QC	QC	QC	QC	QC		
Depth (m)		--	--	--	--	--	--	--	--		
Sampling Date recorded on COC		23/5/07	23/5/07	--	--	--	--	--	--		
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--		
Laboratory Analysis Date		28/5/07	28/5/07	25/5/07	--	25/5/07	--	25/5/07	--		
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	9.1	9.3	9.1	2%	9.0	1%	9.2	1%		

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E005.2											
Moisture	**EQL**										
Moisture	--	27	27	24	29	29	31	26	26	21	29

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E005.2											
Moisture	**EQL**										
Moisture	--	30	24	26	26	25	29	21	24	28	22

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Final
Certificate of Analysis

Laboratory Identification		90241	90242	90243	90244	90222d	90222r	90223d	90223r	90224d	90224r
Sample Identification		IF-21	IF-22	IF/QS-1	IF/QS-2	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	--	28/5/07	--	28/5/07	--
Method : E005.2											
Moisture	**EQL**										
Moisture	--	23	27	27	23	19	35%	25	4%	26	11%

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Quality, Service, Support

Report Date : 24/05/2007
Report Time : 1:59:00PM

Sample **Receipt** Notice (SRN) for **E032113**

Client Details		Laboratory Reference Information	
Client Name:	OTEK Australia Pty Ltd	**Please have this information ready when contacting Labmark.**	
Client Phone:	03 9525 5155		
Client Fax:	03 9593 8555	**Laboratory Report:**	**E032113**
Contact Name:	Tom Santwyk-Anderson	**Quotation Number:**	Q0148.EM
Contact Email:	tsantwyk-anderson@otek.com.au	**Laboratory Address:**	116 Moray St. South Melbourne VIC 3205
Client Address:	Level 1, 222 St. Kilda Rd St.Kilda VIC 3182	**Phone:**	61 3 9686 8344
		Fax:	61 3 9686 7344
Project Name:	Werribee Area 4	**Sample Receipt Contact:**	Kalya Pilbeam
Project Number:	3106004	**Email:**	kalya.pilbeam@labmark.com.au
CoC Number:	- Not provided -	**Reporting Contact:**	Kalya Pilbeam
Purchase Order:	30943	**Email:**	kalya.pilbeam@labmark.com.au
Surcharge:	No surcharge applied (results by 6:30pm on due date)		
Sample Matrix:	SOIL & WATER		
Date Sampled (earliest date):	23/05/2007	**NATA Accreditation:**	13542 **Corporate Site No. :** 15897
Date Samples Received:	23/05/2007	**TGA GMP License:**	185-336 (Sydney)
Date Sample Receipt Notice issued:	24/05/2007	**APVMA License:**	6105 (Sydney)
Date Preliminary Report Due:	30/05/2007	**AQIS Approval:**	NO356 (Sydney)
		AQIS Entry Permit:	200521534 (Sydney)

Reporting Requirements: Electronic Data Download required: No

Sample Condition: COC received with samples. Report number and lab ID's defined on COC.
Samples received in good order .
Samples received with cooling media: Crushed ice .
Samples received chilled.
Security seals: Direct.
Sample container & chemical preservation suitable .

Comments: Samples forwarded to ALS as requested. Total cyanide and Fluoride analysed in Sydney, these results may be delayed.

Holding Times: Date received allows for sufficient time to meet Technical Holding Times.

Preservation: Chemical preservation of samples satisfactory for requested analytes.

Important Notes:

LabMark shall responsibly dispose of spent customer soil and water samples which includes the disintegration of the sample label. A sample disposal fee of $1.00 is applicable on all samples received by the laboratory regardless of whether they have undergone analytical testing. Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur $5.00/ sample/ 3 months. Additional refrigerated storage shall incur $30/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

VOC E016.2: Acetone and Dichloromethane not reported unless requested.

Subcontracted Analyses:

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Report Date : 24/05/2007
Report Time : 1:59:00PM

Quality, Service, Support

Sample **Receipt** Notice (SRN) for **E032113**

The table below represents LabMark's understanding and interpretation of the customer supplied sample COC request. Please confirm that your COC request has been entered correctly. Due to THT and TAT requirements, testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

GRID REVIEW TABLE

				Requested Analysis																			
No.	**Date**	**Depth**	**Client Sample ID**	Fluoride	Acid extractable mercury	Unfiltered metals	Acid extractable metals	Unfiltered metals	Moisture	Organochlorine Pesticides (OC)	Polyaromatic Hydrocarbons (PAH)	Polychlorinated Biphenyls (PCB)	pH in soil	Phenols by GC/MS	PREP Not Reported	PREP Not Reported	Semivolatile Chlorinated Hydrocarbons	Total Cyanide	Petroleum Hydrocarbons (TPH)	Volatile Organic Compounds (VOC)	Volatile TPH by P&T (vTPH)		
90220	23/05		IF-1	●	●		●		●	●	●	●	●	●	●		●	●	●	●	●		
90222	23/05		IF-2		●		●		●	●	●		●	●	●				●		●		
90223	23/05		IF-3		●		●		●	●	●		●	●	●				●		●		
90224	23/05		IF-4		●		●		●	●	●		●	●	●				●		●		
90225	23/05		IF-5		●		●		●	●	●		●	●	●				●		●		
90226	23/05		IF-6		●		●		●	●	●		●	●	●				●		●		
90227	23/05		IF-7		●		●		●	●	●		●	●	●				●		●		
90228	23/05		IF-8		●		●		●	●	●		●	●	●				●		●		
90229	23/05		IF-9		●		●		●	●	●		●	●	●				●		●		
90230	23/05		IF-10	●	●		●		●	●	●	●	●	●	●		●	●	●	●	●		
90231	23/05		IF-11		●		●		●	●	●		●	●	●				●		●		
90232	23/05		IF-12		●		●		●	●	●		●	●	●				●		●		
90233	23/05		IF-13		●		●		●	●	●		●	●	●				●		●		
90234	23/05		IF-14		●		●		●	●	●		●	●	●				●		●		
90235	23/05		IF-15		●		●		●	●	●		●	●	●				●		●		
90236	23/05		IF-16		●		●		●	●	●		●	●	●				●		●		
90237	23/05		IF-17		●		●		●	●	●		●	●	●				●		●		
90238	23/05		IF-18		●		●		●	●	●		●	●	●				●		●		
90239	23/05		IF-19		●		●		●	●	●		●	●	●				●		●		
90240	23/05		IF-20		●		●		●	●	●		●	●	●				●		●		
90241	23/05		IF-21		●		●		●	●	●		●	●	●				●		●		
90242	23/05		IF-22		●		●		●	●	●		●	●	●				●		●		
90243	23/05		IF/QS-1		●		●		●		●				●				●		●		
90244	23/05		IF/QS-2						●	●				●	●								
90245	23/05		IF/TB-1			●		●								●							
			Totals:	2	23	1	23	1	24	23	23	2	22	23	24	1	2	2	23	2	23		

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Report Date : 24/05/2007
Report Time : 1:59:00PM

Quality, Service, Support

Sample **Receipt** Notice (SRN) for **E032113**

No.	Date	Depth	Client Sample ID	Requested Analysis																			
				M17 - MET-T_S	M17 - MET-T_W	MET-T_S Vanadium	MET-T_W Vanadium																
90220	23/05		IF-1	●																			
90222	23/05		IF-2	●		●																	
90223	23/05		IF-3	●		●																	
90224	23/05		IF-4	●		●																	
90225	23/05		IF-5	●		●																	
90226	23/05		IF-6	●		●																	
90227	23/05		IF-7	●		●																	
90228	23/05		IF-8	●		●																	
90229	23/05		IF-9	●		●																	
90230	23/05		IF-10	●																			
90231	23/05		IF-11	●		●																	
90232	23/05		IF-12	●		●																	
90233	23/05		IF-13	●		●																	
90234	23/05		IF-14	●		●																	
90235	23/05		IF-15	●		●																	
90236	23/05		IF-16	●		●																	
90237	23/05		IF-17	●		●																	
90238	23/05		IF-18	●		●																	
90239	23/05		IF-19	●		●																	
90240	23/05		IF-20	●		●																	
90241	23/05		IF-21	●		●																	
90242	23/05		IF-22	●		●																	
90243	23/05		IF/QS-1	●		●																	
90245	23/05		IF/TB-1		●		●																
			Totals:	23	1	21	1																

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Chain of Custody & Analysis Request

LAB	Labmark
ADDRESS	116 Moray St, South Melbourne VIC
LAB CONTACT	Paul Woodward
PHONE	9686 8344

Page 1 of

OTEK Australia Pty Ltd
Lvl 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
_____@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT # 3106004

PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Tom Santwyk-Anderson
tsantwyk-anderson@otek.com.au

LAB JOB # E032113

PRELIM. RESULTS BY: VERBAL ☑ FAX ☑ EMAIL

FINAL REPORT BY: 30.5.07

LAB QUOTE REF: Q0148.EM

OTEK PO No.: 30943

REMARKS

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDII ED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: TPH (C_6-C	TPH (C_6-C	TPH (C_6-C)	OCP	BTEX (Purge & Trap)	Lead	PAH	Benzo(a)pyrene to 0.01µg/l	Total Phenols	Full VIC EPA Screen	Phenols	Metals (As, Ba, Be, [illegible] d, Cr, Co, Cu, Pb, Mn, [illegible] Mo, Ni, Sb, Se, Sn, V, Zn)	Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	OCs/OPs/PCBs	Asbestos	Ecoli	pH
IF-1		90220		X			X				23.5.07	2										X							X
IF-2		90222		X			X					1			X	X			X				X	X					X
IF-3		90223		X			X					1			X	X			X				X	X					X
IF-4		90224		X			X					1			X	X			X				X	X					X
IF-5		90225		X			X					1			X	X			X				X	X					X
IF-6		90226		X			X					1			X	X			X				X	X					X
IF-7		90227		X			X					1			X	X			X				X	X					X
IF-8		90228		X			X					1			X	X			X				X	X					X
IF-9		90229		X			X					1			X	X			X				X	X					X
IF-10		90230		X			X					2										X							X
IF-11		90231		X			X					1			X	X			X				X	X					X
IF-12		90232		X			X					1			X	X			X				X	X					X
IF-13		90233		X			X					1			X	X			X				X	X					X
IF-14		90234		X			X					1			X	X			X				X	X					X
IF-15		90235		X			X					1			X	X			X				X	X					X
IF-16	-	90236		X			X					1			X	X			X				X	X					X
IF-17		90237		X			X					1			X	X			X				X	X					X
IF-18		90238		X			X					1			X	X			X				X	X					X
IF-19		90239		X			X					1			X	X			X				X	X					X
IF-20		90240		X			X					1			X	X			X				X	X					X
IF-21		90241		X			X					1			X	X			X				X	X					X
IF-22		90242		X			X					1			X	X			X				X	X					X
IF/QS-1		90243		X			X					1			X				X					X					
IF/QS-2		90244		X			X					1				X							X						
IF/TB-1		90245	X				X				↓													X					
This Page				24	0	0	25	0	0	0		24	0	0	21	21	0	0	21	0	0	2	21	22	0	0	0	0	22

Relinquished by:	Date: 23.5.07	Time: 13.40	Received by: OLA HADDARA	Date: 23/5	Time: 1.43pm	Custody Seals Intact? Yes / No / NA
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Samples Received Chilled? (Yes) / No

Additional Comments:
48 hr turnaround requested, Please provide electronic results in ESDAT format

ALS Environmental

INTERPRETIVE QUALITY CONTROL REPORT

Client	:	**OTEK**	**Laboratory**	:	Environmental Division Melbourne	**Page**	: **1 of 5**
Contact	:	MR TOM SANTWYK-ANDERSON	**Contact**	:	Paul Loewy		
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182	**Address**	:	4 Westall Rd Springvale VIC Australia 3171	**Work order**	: **EM0703857**
						Amendment No.	:
Project	:	3106004	**Quote number**	:	EN/018/07	**Date received**	: 25 May 2007
Order number	:	30944				**Date issued**	: 1 Jun 2007
C-O-C number	:	- Not provided -					
Site	:	WERRIBEE AREA 4					
E-mail	:	tsantwyk-anderson@otek.com.au	**E-mail**	:	paul.loewy@alsenviro.com	**No. of samples**	
Telephone	:	9525 5155	**Telephone**	:	61-3-8549 9600	**Received**	: 2
Facsimile	:	9593 8555	**Facsimile**	:	61-3-8549 9601	**Analysed**	: 2

This Interpretive Quality Control Report was issued on 1 Jun 2007 for the ALS work order reference EM0703857 and supersedes any previous reports with this reference.
This report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Type Frequency Compliance
- Summary of all Quality Control Outliers
- Brief Method Summaries

Interpretive Quality Control Report - Analysis Holding Time

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the sample aliquot was taken. Elapsed time to analysis represents time from sampling where no extraction / digestion is involved or time from extraction / digestion where this is present. For composite samples, sampling date/time is taken as that of the oldest sample contributing to that composite. Sample date/time for laboratory produced leaches are taken from the completion date/time of the leaching process. Outliers for holding time are based on USEPA SW846, APHA, AS and NEPM (1999). Failed outliers, refer to the 'Summary of Outliers'.

Matrix Type: SOIL ***Analysis Holding Time and Preservation***

Method / **Container /** Client Sample ID(s)	**Date Sampled**	**Extraction / Preparation**			**Analysis**		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
EA055-103: Moisture Content							
Soil Glass Jar - Unpreserved							
IF/QS-1A, IF/QS-2A	**23 May 2007**	----	----	----	**30 May 2007**	30 May 2007	Pass
Soil Glass Jar - Unpreserved							
IF/QS-2A	**23 May 2007**	----	----	----	**31 May 2007**	30 May 2007	**Fail by 1 day**
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved							
IF/QS-1A	**23 May 2007**	**30 May 2007**	19 Nov 2007	Pass	**31 May 2007**	19 Nov 2007	Pass
EG035T: Total Mercury by FIMS							
Soil Glass Jar - Unpreserved							
IF/QS-1A	**23 May 2007**	**30 May 2007**	20 Jun 2007	Pass	**31 May 2007**	20 Jun 2007	Pass
EP068: Pesticides by GCMS							
Soil Glass Jar - Unpreserved							
IF/QS-2A	**23 May 2007**	**31 May 2007**	6 Jun 2007	Pass	**1 Jun 2007**	10 Jul 2007	Pass
EP071: TPH - Semivolatile Fraction							
Soil Glass Jar - Unpreserved							
IF/QS-1A	**23 May 2007**	**30 May 2007**	6 Jun 2007	Pass	**30 May 2007**	9 Jul 2007	Pass
EP075(SIM): PAH/Phenols (SIM)							
Soil Glass Jar - Unpreserved							
IF/QS-1A, IF/QS-2A	**23 May 2007**	**30 May 2007**	6 Jun 2007	Pass	**30 May 2007**	9 Jul 2007	Pass
EP080: TPH Volatiles/BTEX							
Soil Glass Jar - Unpreserved							
IF/QS-1A	**23 May 2007**	**30 May 2007**	6 Jun 2007	Pass	**30 May 2007**	6 Jun 2007	Pass

Interpretive Quality Control Report - Frequency of Quality Control Samples

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which this work order was processed. Actual rate should be greater than or equal to the expected rate.

Matrix Type: SOIL ***Frequency of Quality Control Samples***

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
EA055-103: Moisture Content	4	40	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG005T: Total Metals by ICP-AES	2	20	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	4	**25.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides by GCMS	2	11	**18.2**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	8	**12.5**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	8	**12.5**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	9	**11.1**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Laboratory Control Samples (LCS)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	4	**25.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides by GCMS	1	11	**9.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	9	**11.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Method Blanks (MB)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	4	**25.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides by GCMS	1	11	**9.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	9	**11.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Matrix Spikes (MS)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	4	**25.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides by GCMS	1	11	**9.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	9	**11.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement

Interpretive Quality Control Report - Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged on the 'Quality Control Report'. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot.

Non-surrogates

ALS QC Lot	Matrix Type	Laboratory Sample ID	Client Sample ID	Analyte	Data	Limits	Comment
Laboratory Control Samples (LCS)							
EP068A: Organochlorine Pesticides (OC)	SOIL	462453-001	----	Aldrin	122 %	60-120 %	Recovery greater than upper control limit
Matrix Spikes (MS)							
EG005T: Total Metals by ICP-AES	SOIL	EM0703878-001	Anonymous	Manganese	ND	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP068A: Organochlorine Pesticides (OC)	SOIL	EM0704001-031	Anonymous	gamma-BHC	65.0 %	70-130 %	Recovery less than lower data quality objective
				Endrin	57.4 %	70-130 %	Recovery less than lower data quality objective
EP075(SIM)A: Phenolic Compounds	SOIL	EM0703857-002	IF/QS-2A	Pentachlorophenol	51.2 %	70-130 %	Recovery less than lower control limit

- **For all matrices, no RPD recovery outliers occur for the duplicate analysis.**
- **For all matrices, no method blank result outliers occur.**

Surrogates

- **For all matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time

The following report highlights outliers within this 'Interpretive Quality Control Report - Analysis Holding Time'.

Method / **Container /** Client Sample ID(s)	**Date Sampled**	**Extraction / Preparation**			**Analysis**		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
EA055-103: Moisture Content							
Soil Glass Jar - Unpreserved IF/QS-2A	**23 May 2007**	----	----	----	**31 May 2007**	30 May 2007	**Fail by 1 day**

Outliers : Frequency of Quality Control Samples

The following report highlights outliers within this 'Interpretive Quality Control Report - Frequency of Quality Control Samples'.

- **No frequency outliers occur.**

Method Reference Summary

The analytical procedures used by ALS Environmental are based on established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house procedure are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

Matrix Type: SOIL ***Method Reference Summary***

Preparation Methods

EN69 : Hot Block Digest for metals in soils sediments and sludges - USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)

ORG16 : Methanolic Extraction of Soils for Purge and Trap - (USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

ORG17A : Tumbler Extraction of Solids (Option A - Concentrating) - In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ORG17B : Tumbler Extraction of Solids (Option B - Non-concentrating) - In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.

Analytical Methods

EA055-103 : Moisture Content - A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)

EG005T : Total Metals by ICP-AES - (APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)

EG035T : Total Mercury by FIMS - AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)

EP068 : Pesticides by GCMS - (USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)

EP071 : TPH - Semivolatile Fraction - (USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)

EP075(SIM) : PAH/Phenols (SIM) - (USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)

EP080 : TPH Volatiles/BTEX - (USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)

ALS Environmental

QUALITY CONTROL REPORT

Client	:	**OTEK**	**Laboratory**	: Environmental Division Melbourne	**Page**	:	**1 of 13**
Contact	:	MR TOM SANTWYK-ANDERSON	**Contact**	: Paul Loewy			
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182	**Address**	: 4 Westall Rd Springvale VIC Australia 3171	**Work order**	:	**EM0703857**
					Amendment No.	:	
Project	:	3106004	**Quote number**	: EN/018/07	**Date received**	:	**25 May 2007**
Order number	:	30944			**Date issued**	:	**1 Jun 2007**
C-O-C number	:	- Not provided -					
Site	:	WERRIBEE AREA 4					
E-mail	:	tsantwyk-anderson@otek.com.au	**E-mail**	: paul.loewy@alsenviro.com	**No. of samples**		
Telephone	:	9525 5155	**Telephone**	: 61-3-8549 9600	**Received**	:	2
Facsimile	:	9593 8555	**Facsimile**	: 61-3-8549 9601	**Analysed**	:	2

This final report for the ALSE work order reference EM0703857 supersedes any previous reports with this reference.

Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- Laboratory Duplicates (DUP); Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Samples (LCS); Recovery and Acceptance Limits
- Matrix Spikes (MS); Recovery and Acceptance Limits

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatory	Department
Dilani Fernando	Inorganics - NATA 825 (13778 - Melbourne)
Emily Yuen	Organics - NATA 825 (13778 - Melbourne)

Quality Control Report - Laboratory Duplicates (DUP)

The quality control term **Laboratory Duplicate** refers to an intralaboratory split sample randomly selected from the sample batch. Laboratory duplicates provide information on method precision and sample heterogeneity.
- Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations:* ***LOR*** = *Limit of Reporting,* ***RPD*** = *Relative Percent Difference.*
* Indicates failed QC. The permitted ranges for the RPD of Laboratory Duplicates (relative percent deviation) are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting:- Result < 10 times LOR, no limit - Result between 10 and 20 times LOR, 0% - 50% - Result > 20 times LOR, 0% - 20%

Matrix Type: SOIL ***Laboratory Duplicates (DUP) Report***

Laboratory Sample ID	*Client Sample ID*	*Analyte name*	*LOR*	*Original Result*	*Duplicate Result*	*RPD*
EA055: Moisture Content						
EA055: Moisture Content - (QC Lot: 420206)				**%**	**%**	**%**
EM0703840-001	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	8.6	6.9	22.1
EM0703878-001	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	8.1	8.2	1.7
EA055: Moisture Content - (QC Lot: 421159)				**%**	**%**	**%**
EB0705746-055	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	12.4	12.7	1.9
EM0703857-002	IF/QS-2A	Moisture Content (dried @ 103°C)	1.0 %	25.1	24.7	1.5
EG005T: Total Metals by ICP-AES						
EG005T: Total Metals by ICP-AES - (QC Lot: 419960)				**mg/kg**	**mg/kg**	**%**
EM0703857-001	IF/QS-1A	Antimony	5 mg/kg	<5	<5	0.0
		Arsenic	5 mg/kg	<5	<5	0.0
		Barium	10 mg/kg	240	240	0.0
		Beryllium	1 mg/kg	<1	<1	0.0
		Boron	50 mg/kg	50	60	0.0
		Cadmium	1 mg/kg	<1	<1	0.0
		Chromium	2 mg/kg	28	26	6.0
		Cobalt	2 mg/kg	7	11	44.9
		Copper	5 mg/kg	7	9	25.1
		Lead	5 mg/kg	9	8	0.0
		Manganese	5 mg/kg	91	96	6.1
		Molybdenum	2 mg/kg	<2	<2	0.0
		Nickel	2 mg/kg	14	16	14.1
		Selenium	5 mg/kg	<5	<5	0.0
		Tin	5 mg/kg	<5	<5	0.0
		Vanadium	5 mg/kg	29	47	46.3
		Zinc	5 mg/kg	8	8	0.0
EM0703889-006	Anonymous	Antimony	5 mg/kg	<5	<5	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EG005T: Total Metals by ICP-AES - continued						
EG005T: Total Metals by ICP-AES - (QC Lot: 419960) - continued				mg/kg	mg/kg	%
EM0703889-006	Anonymous	Arsenic	5 mg/kg	<5	<5	0.0
		Beryllium	1 mg/kg	1	1	0.0
		Boron	50 mg/kg	70	70	0.0
		Cadmium	1 mg/kg	<1	<1	0.0
		Chromium	2 mg/kg	33	34	4.1
		Cobalt	2 mg/kg	12	13	0.0
		Copper	5 mg/kg	15	15	0.0
		Lead	5 mg/kg	12	12	0.0
		Manganese	5 mg/kg	375	399	6.1
		Molybdenum	2 mg/kg	<2	<2	0.0
		Nickel	2 mg/kg	38	41	7.4
		Selenium	5 mg/kg	<5	<5	0.0
		Tin	5 mg/kg	<5	<5	0.0
		Vanadium	5 mg/kg	54	57	5.4
		Zinc	5 mg/kg	12	13	13.2
EG035T: Total Mercury by FIMS						
EG035T: Total Mercury by FIMS - (QC Lot: 419961)				mg/kg	mg/kg	%
EM0703857-001	IF/QS-1A	Mercury	0.1 mg/kg	<0.1	<0.1	0.0
EP068A: Organochlorine Pesticides (OC)						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135)				mg/kg	mg/kg	%
EM0704001-031	Anonymous	alpha-BHC	0.05 mg/kg	<0.05	<0.05	0.0
		Hexachlorobenzene (HCB)	0.05 mg/kg	<0.05	<0.05	0.0
		beta-BHC	0.05 mg/kg	<0.05	<0.05	0.0
		gamma-BHC	0.05 mg/kg	<0.05	<0.05	0.0
		delta-BHC	0.05 mg/kg	<0.05	<0.05	0.0
		Heptachlor	0.05 mg/kg	<0.05	<0.05	0.0
		Aldrin	0.05 mg/kg	<0.05	<0.05	0.0
		Heptachlor epoxide	0.05 mg/kg	<0.05	<0.05	0.0
		trans-Chlordane	0.05 mg/kg	<0.05	<0.05	0.0

ALS Environmental

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP068A: Organochlorine Pesticides (OC) - continued						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135) - continued				mg/kg	mg/kg	%
EM0704001-031	Anonymous	alpha-Endosulfan	0.05 mg/kg	<0.05	<0.05	0.0
		cis-Chlordane	0.05 mg/kg	<0.05	<0.05	0.0
		Dieldrin	0.05 mg/kg	<0.05	<0.05	0.0
		4,4'-DDE	0.05 mg/kg	<0.05	<0.05	0.0
		Endrin	0.05 mg/kg	<0.05	<0.05	0.0
		beta-Endosulfan	0.05 mg/kg	<0.05	<0.05	0.0
		4,4'-DDD	0.05 mg/kg	<0.05	<0.05	0.0
		Endrin aldehyde	0.05 mg/kg	<0.05	<0.05	0.0
		Endosulfan sulfate	0.05 mg/kg	<0.05	<0.05	0.0
		4,4'-DDT	0.2 mg/kg	<0.2	<0.2	0.0
		Endrin ketone	0.05 mg/kg	<0.05	<0.05	0.0
		Methoxychlor	0.2 mg/kg	<0.2	<0.2	0.0
EM0704003-004	Anonymous	alpha-BHC	0.05 mg/kg	<0.05	----	0.0
		Hexachlorobenzene (HCB)	0.05 mg/kg	<0.05	----	0.0
		beta-BHC	0.05 mg/kg	<0.05	----	0.0
		gamma-BHC	0.05 mg/kg	<0.05	----	0.0
		delta-BHC	0.05 mg/kg	<0.05	----	0.0
		Heptachlor	0.05 mg/kg	<0.05	----	0.0
		Aldrin	0.05 mg/kg	<0.05	----	0.0
		Heptachlor epoxide	0.05 mg/kg	<0.05	----	0.0
		trans-Chlordane	0.05 mg/kg	<0.05	----	0.0
		alpha-Endosulfan	0.05 mg/kg	<0.05	----	0.0
		cis-Chlordane	0.05 mg/kg	<0.05	----	0.0
		Dieldrin	0.05 mg/kg	<0.05	----	0.0
		4,4'-DDE	0.05 mg/kg	<0.05	----	0.0
		Endrin	0.05 mg/kg	<0.05	----	0.0
		beta-Endosulfan	0.05 mg/kg	<0.05	----	0.0
		4,4'-DDD	0.05 mg/kg	<0.05	----	0.0
		Endrin aldehyde	0.05 mg/kg	<0.05	----	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP068A: Organochlorine Pesticides (OC) - continued						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135) - continued				mg/kg	mg/kg	%
EM0704003-004	Anonymous	Endosulfan sulfate	0.05 mg/kg	<0.05	----	0.0
		4,4'-DDT	0.2 mg/kg	<0.2	----	0.0
		Endrin ketone	0.05 mg/kg	<0.05	----	0.0
		Methoxychlor	0.2 mg/kg	<0.2	----	0.0
EP075(SIM)A: Phenolic Compounds						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 420029)				mg/kg	mg/kg	%
EM0703855-001	Anonymous	Phenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Chlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		3- & 4-Methylphenol	1.0 mg/kg	<1.0	<1.0	0.0
		2-Nitrophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dimethylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,6-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,6-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		Pentachlorophenol	2.0 mg/kg	<2.0	<2.0	0.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029)				mg/kg	mg/kg	%
EM0703855-001	Anonymous	Naphthalene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthylene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluorene	0.5 mg/kg	<0.5	<0.5	0.0
		Phenanthrene	0.5 mg/kg	<0.5	<0.5	0.0
		Anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Benz(a)anthracene	0.5 mg/kg	<0.5	<0.5	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	*Client Sample ID*	*Analyte name*	*LOR*	*Original Result*	*Duplicate Result*	*RPD*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029) - continued				**mg/kg**	**mg/kg**	**%**
EM0703855-001	Anonymous	Chrysene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(b)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(k)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(a)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Indeno(1,2,3,cd)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Dibenz(a,h)anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(g,h,i)perylene	0.5 mg/kg	<0.5	<0.5	0.0
EP080/071: Total Petroleum Hydrocarbons						
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420019)				**mg/kg**	**mg/kg**	**%**
EM0703879-001	Anonymous	C6 - C9 Fraction	10 mg/kg	188	213	12.1
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420028)				**mg/kg**	**mg/kg**	**%**
EM0703855-001	Anonymous	C10 - C14 Fraction	50 mg/kg	<50	<50	0.0
		C15 - C28 Fraction	100 mg/kg	<100	<100	0.0
		C29 - C36 Fraction	100 mg/kg	<100	<100	0.0

Quality Control Report - Method Blank (MB) and Laboratory Control Samples (LCS)

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC type is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a known, interference free matrix spiked with target analytes or certified reference material. The purpose of this QC type is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of actual laboratory data. Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. Abbreviations: LOR = Limit of reporting.

Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

		Method blank result	*Actual Results*		*Recovery Limits*	
			Spike concentration	*Spike Recovery*	*Dynamic Recovery Limits*	
Analyte name	*LOR*			*LCS*	*Low*	*High*
EG005T: Total Metals by ICP-AES						
EG005T: Total Metals by ICP-AES - (QC Lot: 419960)		mg/kg	mg/kg	%	%	%
Antimony	5 mg/kg	<5	----	----	----	----
Arsenic	5 mg/kg	----	13.6	96.1	85.9	126
	5 mg/kg	<5	----	----	----	----
Barium	10 mg/kg	----	139	108	86.6	123
	10 mg/kg	<10	----	----	----	----
Beryllium	1 mg/kg	<1	----	----	----	----
Boron	50 mg/kg	<50	----	----	----	----
Cadmium	1 mg/kg	----	2.8	103	86.8	123
	1 mg/kg	<1	----	----	----	----
Chromium	2 mg/kg	<2	----	----	----	----
	2 mg/kg	----	60.9	95.4	91.2	119
Cobalt	2 mg/kg	<2	----	----	----	----
Copper	5 mg/kg	<5	----	----	----	----
	5 mg/kg	----	55.1	92.6	90.7	121
Lead	5 mg/kg	<5	----	----	----	----
	5 mg/kg	----	54.9	96.1	91	121
Manganese	5 mg/kg	<5	----	----	----	----
Molybdenum	2 mg/kg	<2	----	----	----	----
Nickel	2 mg/kg	----	55.1	98.0	91.5	118
	2 mg/kg	<2	----	----	----	----
Selenium	5 mg/kg	<5	----	----	----	----
Tin	5 mg/kg	<5	----	----	----	----
Vanadium	5 mg/kg	<5	----	----	----	----
Zinc	5 mg/kg	----	105	91.8	85.8	118
	5 mg/kg	<5	----	----	----	----

Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	*LOR*	*Method blank result*	*Actual Results*		*Recovery Limits*	
			Spike concentration	*Spike Recovery*	*Dynamic Recovery Limits*	
				LCS	*Low*	*High*
EG035T: Total Mercury by FIMS						
EG035T: Total Mercury by FIMS - (QC Lot: 419961)		mg/kg	mg/kg	%	%	%
Mercury	0.1 mg/kg	<0.1	----	----	----	----
	0.1 mg/kg	----	1.47	81.9	71.9	119
EP068A: Organochlorine Pesticides (OC)						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135)		mg/kg	mg/kg	%	%	%
4,4'-DDD	0.05 mg/kg	----	0.25	103	60	120
	0.05 mg/kg	<0.05	----	----	59.5	117
4,4'-DDE	0.05 mg/kg	<0.05	----	----	57.3	124
	0.05 mg/kg	----	0.25	105	60	120
4,4'-DDT	0.2 mg/kg	<0.2	----	----	54.6	125
	0.2 mg/kg	----	0.25	113	60	120
Aldrin	0.05 mg/kg	<0.05	----	----	59.2	120
	0.05 mg/kg	----	0.25	122	60	120
alpha-BHC	0.05 mg/kg	<0.05	----	----	58.9	121
	0.05 mg/kg	----	0.25	108	60	120
alpha-Endosulfan	0.05 mg/kg	----	0.25	105	60	120
	0.05 mg/kg	<0.05	----	----	61.4	119
beta-BHC	0.05 mg/kg	<0.05	----	----	65.0	121
	0.05 mg/kg	----	0.25	110	60	120
beta-Endosulfan	0.05 mg/kg	----	0.25	109	60	120
	0.05 mg/kg	<0.05	----	----	66.4	117
cis-Chlordane	0.05 mg/kg	----	0.25	104	60	120
	0.05 mg/kg	<0.05	----	----	59.1	118
delta-BHC	0.05 mg/kg	<0.05	----	----	60.1	120
	0.05 mg/kg	----	0.25	105	60	120
Dieldrin	0.05 mg/kg	<0.05	----	----	61.3	122
	0.05 mg/kg	----	0.25	97.7	60	120
Endosulfan sulfate	0.05 mg/kg	----	0.25	104	60	120
	0.05 mg/kg	<0.05	----	----	55.9	119
Endrin	0.05 mg/kg	<0.05	----	----	55.7	124
	0.05 mg/kg	----	0.25	108	60	120

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Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP068A: Organochlorine Pesticides (OC) - continued						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135) - continued		mg/kg	mg/kg	%	%	%
Endrin aldehyde	0.05 mg/kg	----	0.25	97.6	60	120
	0.05 mg/kg	<0.05	----	----	50.4	125
Endrin ketone	0.05 mg/kg	<0.05	----	----	54.2	119
	0.05 mg/kg	----	0.25	105	60	120
gamma-BHC	0.05 mg/kg	<0.05	----	----	60.1	119
	0.05 mg/kg	----	0.25	107	60	120
Heptachlor	0.05 mg/kg	<0.05	----	----	51.0	128
	0.05 mg/kg	----	0.25	109	60	120
Heptachlor epoxide	0.05 mg/kg	----	0.25	104	60	120
	0.05 mg/kg	<0.05	----	----	63.5	117
Hexachlorobenzene (HCB)	0.05 mg/kg	<0.05	----	----	60.4	117
	0.05 mg/kg	----	0.25	108	60	120
Methoxychlor	0.2 mg/kg	----	0.25	117	60	120
	0.2 mg/kg	<0.2	----	----	44.4	128
trans-Chlordane	0.05 mg/kg	<0.05	----	----	58.0	121
	0.05 mg/kg	----	0.25	105	60	120
EP075(SIM)A: Phenolic Compounds						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 420029)		mg/kg	mg/kg	%	%	%
2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	89.3	71.8	123
2,4,6-Trichlorophenol	0.5 mg/kg	----	10	86.9	65.4	126
	0.5 mg/kg	<0.5	----	----	----	----
2,4-Dichlorophenol	0.5 mg/kg	----	10	88.9	74.5	120
	0.5 mg/kg	<0.5	----	----	----	----
2,4-Dimethylphenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	90.3	71.5	126
2,6-Dichlorophenol	0.5 mg/kg	----	10	87.9	68.5	129
	0.5 mg/kg	<0.5	----	----	----	----
2-Chlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	89.9	68.4	127

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Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP075(SIM)A: Phenolic Compounds - continued						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 420029) - continued		mg/kg	mg/kg	%	%	%
2-Methylphenol	0.5 mg/kg	----	10	89.8	82.2	120
	0.5 mg/kg	<0.5	----	----	----	----
2-Nitrophenol	0.5 mg/kg	----	10	88.4	59.6	129
	0.5 mg/kg	<0.5	----	----	----	----
3- & 4-Methylphenol	1.0 mg/kg	<1.0	----	----	----	----
	1.0 mg/kg	----	20	90.6	76.8	123
4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	89.8	72.6	122
Pentachlorophenol	1.0 mg/kg	<1.0	----	----	----	----
	1.0 mg/kg	----	10	71.4	20.2	104
Phenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	91.5	77.5	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029)		mg/kg	mg/kg	%	%	%
Acenaphthene	0.5 mg/kg	----	10	91.3	75.0	123
	0.5 mg/kg	<0.5	----	----	----	----
Acenaphthylene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	91.3	77.4	122
Anthracene	0.5 mg/kg	----	10	89.7	80.4	118
	0.5 mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	88.6	71.6	120
Benzo(a)pyrene	0.5 mg/kg	----	10	88.5	70.5	122
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(b)fluoranthene	0.5 mg/kg	----	10	89.1	68.0	126
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(g,h,i)perylene	0.5 mg/kg	----	10	91.0	67.6	119
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	0.5 mg/kg	----	10	89.7	68.8	126
	0.5 mg/kg	<0.5	----	----	----	----

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Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029) - continued		mg/kg	mg/kg	%	%	%
Chrysene	0.5 mg/kg	----	10	93.6	72.4	122
	0.5 mg/kg	<0.5	----	----	----	----
Dibenz(a,h)anthracene	0.5 mg/kg	----	10	91.3	66.3	121
	0.5 mg/kg	<0.5	----	----	----	----
Fluoranthene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	90.4	74.7	122
Fluorene	0.5 mg/kg	----	10	90.3	77.8	120
	0.5 mg/kg	<0.5	----	----	----	----
Indeno(1,2,3,cd)pyrene	0.5 mg/kg	----	10	91.6	66.3	125
	0.5 mg/kg	<0.5	----	----	----	----
Naphthalene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	91.3	70.2	124
Phenanthrene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	91.0	65.3	126
Pyrene	0.5 mg/kg	----	10	90.3	74.8	120
	0.5 mg/kg	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420019)		mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	10 mg/kg	<10	----	----	----	----
	10 mg/kg	----	32	95.0	81	123
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420028)		mg/kg	mg/kg	%	%	%
C10 - C14 Fraction	50 mg/kg	<50	----	----	----	----
	50 mg/kg	----	606	87.5	69	123
C15 - C28 Fraction	100 mg/kg	----	1460	101	69	127
	100 mg/kg	<100	----	----	----	----
C29 - C36 Fraction	100 mg/kg	----	342	84.0	70	130
	100 mg/kg	<100	----	----	----	----

Quality Control Report - Matrix Spikes (MS)

The quality control term **Matrix Spike (MS)** refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC type is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQO's). 'Ideal' recovery ranges stated may be waived in the event of sample matrix interferences. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations:* ***LOR*** *= Limit of Reporting,* ***RPD*** *= Relative Percent Difference.*

* Indicates failed QC

Matrix Type: SOIL

Matrix Spike (MS) Report

					Actual Results		*Recovery Limits*	
					Sample Result	*Spike Recovery*	*Static Limits*	
Analyte name	*Laboratory Sample ID*	*Client Sample ID*	*LOR*	*Spike Concentration*		*MS*	*Low*	*High*
EG005T: Total Metals by ICP-AES								
EG005T: Total Metals by ICP-AES - (QC Lot: 419960)				mg/kg	mg/kg	%	%	%
Arsenic	EM0703878-001	Anonymous	5 mg/kg	50	<5	107	70	130
Barium			10 mg/kg	50	30	107	70	130
Beryllium			1 mg/kg	50	<1	114	70	130
Cadmium			1 mg/kg	50	<1	103	70	130
Chromium			2 mg/kg	50	15	99.6	70	130
Copper			5 mg/kg	50	7	106	70	130
Lead			5 mg/kg	50	6	101	70	130
Manganese			5 mg/kg	50	248	* Not Determined	70	130
Molybdenum			2 mg/kg	50	<2	89.5	70	130
Nickel			2 mg/kg	50	7	103	70	130
Selenium			5 mg/kg	50	<5	110	70	130
Vanadium			5 mg/kg	50	19	101	70	130
Zinc			5 mg/kg	50	10	102	70	130
EG035T: Total Mercury by FIMS								
EG035T: Total Mercury by FIMS - (QC Lot: 419961)				mg/kg	mg/kg	%	%	%
Mercury	EM0703878-001	Anonymous	0.1 mg/kg	5.0	<0.1	85.9	70	130
EP068A: Organochlorine Pesticides (OC)								
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135)				mg/kg	mg/kg	%	%	%
gamma-BHC	EM0704001-031	Anonymous	0.05 mg/kg	0.25	<0.05	65.0	70	130
Heptachlor			0.05 mg/kg	0.25	<0.05	72.8	70	130
Aldrin			0.05 mg/kg	0.25	<0.05	86.6	70	130
Dieldrin			0.05 mg/kg	0.25	<0.05	73.2	70	130
Endrin			0.05 mg/kg	0.25	<0.05	57.4	70	130
4,4'-DDT			0.20 mg/kg	0.25	<0.2	74.2	70	130
EP075(SIM)A: Phenolic Compounds								

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Matrix Type: SOIL

Matrix Spike (MS) Report

					Actual Results		Recovery Limits	
					Sample Result	Spike Recovery	Static Limits	
Analyte name	***Laboratory Sample ID***	***Client Sample ID***	***LOR***	***Spike Concentration***		***MS***	***Low***	***High***
EP075(SIM)A: Phenolic Compounds - continued								
EP075(SIM)A: Phenolic Compounds - (QC Lot: 420029)				mg/kg	mg/kg	%	%	%
Phenol	EM0703857-002	IF/QS-2A	0.5 mg/kg	10	<0.5	86.1	70	130
2-Chlorophenol			0.5 mg/kg	10	<0.5	86.3	70	130
2-Nitrophenol			0.5 mg/kg	10	<0.5	83.1	70	130
4-Chloro-3-Methylphenol			0.5 mg/kg	10	<0.5	81.1	70	130
Pentachlorophenol			2.0 mg/kg	10	<2.0	51.2	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029)				mg/kg	mg/kg	%	%	%
Acenaphthene	EM0703857-002	IF/QS-2A	0.5 mg/kg	10	<0.5	82.6	70	130
Pyrene			0.5 mg/kg	10	<0.5	87.2	70	130
EP080/071: Total Petroleum Hydrocarbons								
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420019)				mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	EM0703893-002	Anonymous	10 mg/kg	28	<10	75.4		
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420028)				mg/kg	mg/kg	%	%	%
C10 - C14 Fraction	EM0703857-001	IF/QS-1A	50 mg/kg	606	<50	92.8	60	130
C15 - C28 Fraction			100 mg/kg	1460	<100	103	60	130
C29 - C36 Fraction			100 mg/kg	342	<100	81.9	60	130

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CERTIFICATE OF ANALYSIS

Client	: **OTEK**	*Laboratory*	: **Environmental Division Melbourne**	*Page*	: **1 of 6**
Contact	: **MR TOM SANTWYK-ANDERSON**	*Contact*	: **Paul Loewy**	*Work Order*	: **EM0703857**
Address	: **LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182**	*Address*	: **4 Westall Rd Springvale VIC Australia 3171**		
E-mail	: **tsantwyk-anderson@otek.com.au**	*E-mail*	: **paul.loewy@alsenviro.com**		
Telephone	: **9525 5155**	*Telephone*	: **61-3-8549 9600**		
Facsimile	: **9593 8555**	*Facsimile*	: **61-3-8549 9601**		
Project	: **3106004**	*Quote number*	: **EN/018/07**	*Date received*	: **25 May 2007**
Order number	: **30944**			*Date issued*	: **1 Jun 2007**
C-O-C number	: **- Not provided -**			*No. of samples*	- *Received* : **2**
Site	: **WERRIBEE AREA 4**				*Analysed* : **2**

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatory	*Position*	*Department*
Dilani Fernando	**Senior Inorganic Instrument Chemist**	**Inorganics - NATA 825 (13778 - Melbourne)**
Emily Yuen	**Senior Organic Instrument Chemist**	**Organics - NATA 825 (13778 - Melbourne)**

ALS Environmental

Comments

This report for the ALSE reference EM0703857 supersedes any previous reports with this reference. Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- **Analytical Results for Samples Submitted**
- **Surrogate Recovery Data**

The analytical procedures used by ALS Environmental have been developed from established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

When moisture determination has been performed, results are reported on a dry weight basis. When a reported 'less than' result is higher than the LOR, this may be due to primary sample extracts/digestion dilution and/or insuffient sample amount for analysis. Surrogate Recovery Limits are static and based on USEPA SW846 or ALS-QWI/EN38 (in the absence of specified USEPA limits). Where LOR of reported result differ from standard LOR, this may be due to high moisture, reduced sample amount or matrix interference. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number, LOR = Limit of Reporting. * Indicates failed Surrogate Recoveries.

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Analytical Results

	Client Sample ID :	IF/QS-1A	IF/QS-2A			
	Sample Matrix Type / Description :	SOIL	SOIL			
	Sample Date / Time :	23 May 2007 15:00	23 May 2007 15:00			
	Laboratory Sample ID :	EM0703857-001	EM0703857-002			
Analyte	CAS number	LOR	Units			
EA055: Moisture Content						
Moisture Content (dried @ 103°C)		1.0	%	25.1	25.1	
EG005T: Total Metals by ICP-AES						
Antimony	7440-36-0	5	mg/kg	<5	----	
Arsenic	7440-38-2	5	mg/kg	<5	----	
Barium	7440-39-3	10	mg/kg	240	----	
Beryllium	7440-41-7	1	mg/kg	<1	----	
Boron	7440-42-8	50	mg/kg	50	----	
Cadmium	7440-43-9	1	mg/kg	<1	----	
Chromium	7440-47-3	2	mg/kg	28	----	
Cobalt	7440-48-4	2	mg/kg	7	----	
Copper	7440-50-8	5	mg/kg	7	----	
Lead	7439-92-1	5	mg/kg	9	----	
Manganese	7439-96-5	5	mg/kg	91	----	
Molybdenum	7439-98-7	2	mg/kg	<2	----	
Nickel	7440-02-0	2	mg/kg	14	----	
Selenium	7782-49-2	5	mg/kg	<5	----	
Tin	7440-31-5	5	mg/kg	<5	----	
Vanadium	7440-62-2	5	mg/kg	29	----	
Zinc	7440-66-6	5	mg/kg	8	----	
EG035T: Total Mercury by FIMS						
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	
EP068A: Organochlorine Pesticides (OC)						
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	
4.4'-DDE	72-55-9	0.05	mg/kg	----	<0.05	
Endrin	72-20-8	0.05	mg/kg	----	<0.05	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	

ALS Environmental

Analytical Results

	Client Sample ID :	IF/QS-1A	IF/QS-2A			
	Sample Matrix Type / Description :	SOIL	SOIL			
	Sample Date / Time :	23 May 2007 15:00	23 May 2007 15:00			
	Laboratory Sample ID :	EM0703857-001	EM0703857-002			
Analyte	CAS number	LOR	Units			
EP068A: Organochlorine Pesticides (OC)						
4.4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	
4.4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	
EP075(SIM)A: Phenolic Compounds						
Phenol	108-95-2	0.5	mg/kg	----	<0.5	
2-Chlorophenol	95-57-8	0.5	mg/kg	----	<0.5	
2-Methylphenol	95-48-7	0.5	mg/kg	----	<0.5	
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	----	<1.0	
2-Nitrophenol	88-75-5	0.5	mg/kg	----	<0.5	
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	----	<0.5	
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	----	<0.5	
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	----	<0.5	
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	----	<0.5	
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	----	<0.5	
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	----	<0.5	
Pentachlorophenol	87-86-5	2.0	mg/kg	----	<2.0	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	

ALS Environmental

Analytical Results

	Client Sample ID :	IF/QS-1A	IF/QS-2A			
	Sample Matrix Type / Description :	SOIL	SOIL			
	Sample Date / Time :	23 May 2007 15:00	23 May 2007 15:00			
	Laboratory Sample ID :	EM0703857-001	EM0703857-002			
Analyte	CAS number	LOR	Units			
EP080/071: Total Petroleum Hydrocarbons						
C6 - C9 Fraction		10	mg/kg	<10	----	
C10 - C14 Fraction		50	mg/kg	<50	----	
C15 - C28 Fraction		100	mg/kg	<100	----	
C29 - C36 Fraction		100	mg/kg	<100	----	
EP068S: Organochlorine Pesticide Surrogate						
Dibromo-DDE	21655-73-2	0.1	%	----	96.5	
EP068T: Organophosphorus Pesticide Surrogate						
DEF	78-48-8	0.1	%	----	95.4	
EP075(SIM)S: Phenolic Compound Surrogates						
Phenol-d6	13127-88-3	0.1	%	95.5	96.2	
2-Chlorophenol-D4	93951-73-6	0.1	%	94.6	95.1	
2.4.6-Tribromophenol	118-79-6	0.1	%	84.7	80.9	
EP075(SIM)T: PAH Surrogates						
2-Fluorobiphenyl	321-60-8	0.1	%	96.6	97.2	
Anthracene-d10	1719-06-8	0.1	%	91.0	91.0	
4-Terphenyl-d14	1718-51-0	0.1	%	93.1	92.2	
EP080S: TPH(V)/BTEX Surrogates						
1.2-Dichloroethane-D4	17060-07-0	0.1	%	83.6	----	
Toluene-D8	2037-26-5	0.1	%	88.9	----	
4-Bromofluorobenzene	460-00-4	0.1	%	82.0	----	

ALS Environmental

Surrogate Control Limits

Matrix Type: SOIL - Surrogate Control Limits ***Surrogate Control Limits***

Method name	*Analyte name*	*Lower Limit*	*Upper Limit*
EP068: Pesticides by GCMS			
EP068S: Organochlorine Pesticide Surrogate	Dibromo-DDE		
EP068T: Organophosphorus Pesticide Surrogate	DEF		
EP075(SIM): PAH/Phenols (SIM)			
EP075(SIM)S: Phenolic Compound Surrogates	Phenol-d6		
	2-Chlorophenol-D4		
	2,4,6-Tribromophenol		
EP075(SIM)T: PAH Surrogates	2-Fluorobiphenyl		
	Anthracene-d10		
	4-Terphenyl-d14		
EP080: TPH Volatiles/BTEX			
EP080S: TPH(V)/BTEX Surrogates	1,2-Dichloroethane-D4	70	130
	Toluene-D8	70	130
	4-Bromofluorobenzene	70	130

AUSTRALIAN LABORATORY SERVICES PTY LTD ABN 84 009 936 029
4 Westall Rd Springvale VIC 3171 Australia
Telephone: 61-3-8549 9600 Facsimile: 61-3-8549 9601 http://www.alsenviro.com/

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive report

Client Details

Client	:	**OTEK**
Contact	:	**MR TOM SANTWYK-ANDERSON**
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182
Project	:	**3106004**
Order number	:	**30944**
C-O-C Number	:	**- Not provided -**
Site	:	**WERRIBEE AREA 4**
Sampler	:	**TSA**
E-mail	:	tsantwyk-anderson@otek.com.au
Telephone	:	9525 5155
Facsimile	:	9593 8555

Laboratory Details

Laboratory	:	**Environmental Division Melbourne**
Manager	:	**Paul Loewy**
Address	:	4 Westall Rd Springvale VIC Australia 3171
Quote number	:	ES20070065
Work order	:	**EM0703857**
E-mail	:	paul.loewy@alsenviro.com
Telephone	:	61-3-8549 9600
Facsimile	:	61-3-8549 9601

Dates

Date Samples Received	:	25 May 2007	**SRA Issue Date**	:	30 May 2007
Scheduled Reporting Date	:	**1 Jun 2007**	**Client Requested Date**	:	30 May 2007

Delivery Details

Mode of Delivery	:	Carrier.	**Temperature**	:	----
No. of coolers/boxes	:	1	**No. of samples** - **Received**		2
Security Seal	:	Intact.	- **Analysed**		2

Comments

- **Samples received in appropriately pretreated and preserved containers.**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALSE Melbourne.**
- **Sample(s) have been received within recommended holding times**

- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.
- When the sampling time is not supplied on the COC documentation, ALSE defaults the sampling time to that of the COC 'relinquishment' time (if supplied). If this also is not supplied, ALSE defaults the sampling time to the 'time of receipt at Laboratory'.

Client	: OTEK	**Work Order**	: EM0703857
Project	: 3106004	**ALS Quote Reference**	: ES20070065

Summary of Sample(s) / Container(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as moisture and preparation tasks, that form an implicit part of that package.

ALS Sample ID.	Client Sample ID - Sample Date	**Requested Analysis**									
		EA055-103 - SOIL Moisture Content	**EG005T (solids) - SOIL** Total Metals by ICP-AES	**EP068A (solids) - SOIL** Organochlorine Pesticides by GCMS	**EP075 SIM PAH only - SOIL** SIM - PAH only	**EP075 SIM Phenols only - SOIL** SIM - Phenols only	**S-03 - SOIL** 13 Metals (NEPM Suite - incl. Digestion)	**TPH only - SOIL** TPH (C6 - C36)			
EM0703857-001	**IF/QS-1A - 23 May 2007**	⌋	⌋		⌋		⌋	⌋			
EM0703857-002	**IF/QS-2A - 23 May 2007**	⌋		⌋		⌋					
	Total(s) :	**2**	**1**	**1**	**1**	**1**	**1**	**1**			

Client	: OTEK	**Work Order**	: EM0703857
Project	: 3106004	**ALS Quote Reference**	: ES20070065

ALS Environmental

Requested Reports

l	**MR TOM SANTWYK-ANDERSON**		
-	A4 - AU Quality Control Report - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Interpretive Quality Control Report - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Certificate of Analysis - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	EDI Format - ENMRG	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Sample Receipt Notification - Comprehensive format	Email	tsantwyk-anderson@otek.com.au
-	Default - Chain of Custody	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Tax Invoice	Email	tsantwyk-anderson@otek.com.au
l	**MS CHANTEL WEBBER**		
-	A4 - AU Tax Invoice	Email	chantelwebber@otek.com.au
l	**RESULTS/INVOICE**		
-	A4 - AU Certificate of Analysis - NEPM format	Email	vicreception@otek.com.au
-	A4 - AU Quality Control Report - NEPM format	Email	igulec@otek.com.au
-	A4 - AU Interpretive Quality Control Report - NEPM format	Email	vicreception@otek.com.au
-	A4 - AU Certificate of Analysis - NEPM format	Email	igulec@otek.com.au
-	A4 - AU Quality Control Report - NEPM format	Email	vicreception@otek.com.au
-	A4 - AU Interpretive Quality Control Report - NEPM format	Email	igulec@otek.com.au
-	EDI Format - ENMRG	Email	igulec@otek.com.au
-	EDI Format - ENMRG	Email	vicreception@otek.com.au
-	Default - Chain of Custody	Email	igulec@otek.com.au
-	A4 - AU Sample Receipt Notification - Comprehensive format	Email	vicreception@otek.com.au
-	A4 - AU Sample Receipt Notification - Comprehensive format	Email	igulec@otek.com.au
-	Default - Chain of Custody	Email	vicreception@otek.com.au
-	A4 - AU Tax Invoice	Email	vicreception@otek.com.au
-	A4 - AU Tax Invoice	Email	igulec@otek.com.au

Sample Container(s) / Preservation Non-Compliance Log

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

l **No sample container / preservation non-compliance exist.**

LAB	ALS	Page 1 of	
ADDRESS	4 Westal Rd, Springvale		
LAB CONTACT	Paul Lowie		
PHONE	9549 9600		

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Lvl 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
_____@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT #	PROJECT NAME
3106004	Werribee Area 4

COLLECTORS NAME	LAB JOB #
Tom Santwyk-Anderson tsantwyk-anderson@otek.com.au	

PRELIM. RESULTS BY: ☐ VERBAL ☑ FAX ☑ EMAIL

FINAL REPORT BY: 30.5.07

LAB QUOTE REF: ME/022b/06 | OTEK PO No.: 30944

REMARKS

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: TPH (C_6-C_{36})/BTEX	TPH (C_6-C_{36})/BTEX/Pb	TPH (C_6-C_{36})	HOLD	BTEX (Purge & Trap)	Lead	PAH	Benzo(a)pyrene to 0.01µg/l	Total Phenols	EPA Screen	Phenols (Speciated)	Metals (As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn)	Phosphates & Nitrates	OCs/OPs	Asbestos	Ecoli	pH
IF/QS-1A	-	1		X			X				23.5.07	1			X				X					X					
IF/QS-2A	-	2		X			X				"	1				X							X						
This Page				2	0	0	2	0	0	0	0	2	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0

Environmental Division
Melbourne
Work Order
EM0703857

Telephone : 61-3-8549 9600

Additional Comments:
48 hr turnaround requested, Please provide electronic results in ESDAT format

Relinquished by:	Date: 23.5.07	Time: 13:40	Received by: OLA HADDARA	Date: 23/5	Time: 1.43pm
Relinquished by: IAN, LABMASTER	Date: 24/5/07	Time: 9 AM	Received by:	Date:	Time:

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

PLEASE FORWARD SAMPLES TO ALS

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

Accredited for compliance with ISO/IEC 17025. The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

Accreditation No. 13542

AQIS
AUSTRALIAN QUARANTINE AND INSPECTION SERVICE
SYDNEY License No. N0356.

Quarantine Approved Premises criteria 5.1 for quarantine containment level 1 (QCI) facilities. Class five criteria cover premises utilised for research, analysis and testing of biological material, soil, animal, plant and human products.

FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:	E032582
Client Name:	OTEK Australia Pty Ltd
Client Reference:	Werribee Area 4
Contact Name:	Tom Santwyk-Anderson
Chain of Custody No:	na
Sample Matrix:	SOIL & WATER

Cover Page 1 of 4
plus Sample Results

Date Received: 18/06/2007
Date Reported: 27/06/2007

This Final Certificate of Analysis consists of sample results, DQI's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

QUALITY ASSURANCE CRITERIA

Accuracy:	matrix spike:	1 in first 5-20, then 1 every 20 samples
	lcs, crm, method:	1 per analytical batch
	surrogate spike:	addition per target organic method
Precision:	laboratory duplicate:	1 in first 5-10, then 1 every 10 samples
	laboratory triplicate:	re-extracted & reported when duplicate RPD values exceed acceptance criteria
Holding Times:	soils, waters:	Refer to LabMark Preservation & THT table VOC's 14 days water / soil VAC's 7 days water or 14 days acidified VAC's 14 days soil SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements Mercury 28 days
Confirmation:	target organic analysis:	GC/MS, or confirmatory column
Sensitivity:	EQL:	Typically 2-5 x Method Detection Limit (MDL)

QUALITY CONTROL
GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy:	spike, lcs, crm surrogate:	general analytes 70% - 130% recovery phenol analytes 50% - 130% recovery organophosphorous pesticide analytes 60% - 130% recovery phenoxy acid herbicides 50% - 130% recovery
	anion/cation bal:	+/- 10% (0-3 meq/l), +/- 5% (>3 meq/l)
Precision:	method blank:	not detected >95% of the reported EQL
	duplicate lab RPD (metals):	0-30% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)
	duplicate lab RPD:	0-50% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)

QUALITY CONTROL
ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy:	spike, lcs, crm surrogate:	analyte specific recovery data <3xsd of historical mean
Uncertainty:	spike, lcs:	measurement calculated from historical analyte specific control charts

RESULT ANNOTATION

Data Quality Objective	s:	matrix spike recovery	p:	pending	bcs:	batch specific lcs
Data Quality Indicator	d:	laboratory duplicate	lcs:	laboratory control sample	bmb:	batch specific mb
Estimated Quantitation Limit	t:	laboratory triplicate	crm:	certified reference material		
not applicable	r:	RPD relative % difference	mb:	method blank		

Ivan Povolny
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Geoff Weir
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Simon Mills
Authorising Chemist (NATA signatory)
simon.mills@labmark.com.au

NEPC GUIDELINE COMPLIANCE - DQO

1. GENERAL

A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.

B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.

C. Laboratory QA/QC samples are specific to this project.

D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.

E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.

F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.

G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.

H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.

I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

2. CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

A. SRN issued to client upon sample receipt & login verification.

B. Preservation & sampling date details specified on COC and SRN, unless noted.

C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

3. NATA ACCREDITED METHODS

A. NATA accreditation held for each in-house method and sample matrix type reported, unless noted below (Refer to subcontracted test reports for NATA accreditation status).

B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.

C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments.

4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix: **SOIL**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	Volatile TPH by P&T (vTPH)	19	2	11%	0	1	5%
3	Petroleum Hydrocarbons (TPH)	19	2	11%	0	1	5%
6	Polyaromatic Hydrocarbons (PAH)	19	2	11%	0	1	5%
9	Phenols by GC/MS	18	2	11%	0	1	6%
12	Volatile Organic Compounds (VOC)	2	0	0%	0	0	0%
15	Organochlorine Pesticides (OC)	18	2	11%	0	1	6%
18	Polychlorinated Biphenyls (PCB)	2	0	0%	0	0	0%
19	Semivolatile Chlorinated Hydrocarbons	2	0	0%	0	0	0%
20	Acid extractable mercury	19	2	11%	0	1	5%
24	Acid extractable metals	19	2	11%	1	1	5%
28	pH in soil	18	2	11%	0	0	0%
30	Fluoride	2	0	0%	0	0	0%
31	Total Cyanide	2	0	0%	0	0	0%
32	Moisture	19	--	--	--	--	--

Matrix: **WATER**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
22	Filtered mercury	1	0	0%	0	0	0%
23	Filtered metals	1	0	0%	0	0	0%

GLOSSARY:

#d	number of discrete duplicate extractions/analyses performed.
%d-ratio	NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).
#t	number of triplicate extractions/analyses performed.
#s	number of spiked samples analysed.
%s-ratio	USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

5. ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, Corporate Site No. 13535., unless indicated below.
B: Metals (soil) zinc, selenium, Chromium and arsenic recovery for sample 95918s at 133, 55, 160 and 62% respectively, lcs recovery at 99, 101, 103 and 101% respectively.
C. Metals (soil) Lab #95917d reported RPD range of 0 - 67%, triplicate results issued.

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

Laboratory Report No: E032582
Client Name: OTEK Australia Pty Ltd
Contact Name: Tom Santwyk-Anderson
Client Reference Werribee Area 4 3106004

Date: 27/06/07
This report supercedes reports issued on: 25/06/07

Final
Certificate
of Analysis

Laboratory Identification		95916	95917	95918	95919	95920	95921	95922	95923	95924	95925
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		27/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	27/6/07
Method : E003.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E003.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID.

Laboratory Identification		95926	95927	95928	95929	95930	95931	95932	95933	95934	95917d
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	IF/QS3	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07
Method : E003.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E003.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID.

Laboratory Identification		**95917r**	**95929d**	**95929r**	**95918s**	**lcs**	**mb**				
Sample Identification		QC	QC	QC	QC	QC	QC				
Depth (m)		--	--	--	--	--	--				
Sampling Date recorded on COC		--	--	--	--	--	--				
Laboratory Extraction (Preparation) Date		--	22/6/07	--	22/6/07	22/6/07	22/6/07				
Laboratory Analysis Date		--	23/6/07	--	23/6/07	23/6/07	23/6/07				
Method : E003.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	--	<10	--	116%	110%	<10				

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E003.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID.

Final
Certificate of Analysis

Laboratory Identification		95916	95917	95918	95919	95920	95921	95922	95923	95924	95925
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**95926**	**95927**	**95928**	**95929**	**95930**	**95931**	**95932**	**95933**	**95934**	**95917d**
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	IF/QS3	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**95917r**	**95929d**	**95929r**	**95918s**	**lcs**	**mb**				
Sample Identification		QC	QC	QC	QC	QC	QC				
Depth (m)		--	--	--	--	--	--				
Sampling Date recorded on COC		--	--	--	--	--	--				
Laboratory Extraction (Preparation) Date		--	22/6/07	--	22/6/07	22/6/07	22/6/07				
Laboratory Analysis Date		--	24/6/07	--	24/6/07	23/6/07	23/6/07				
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	--	<50	--	--	--	<50				
C15 - C28 Fraction	100	--	<100	--	104%	95%	<100				
C29 - C36 Fraction	100	--	<100	--	--	--	<100				
Sum of TPH C10 - C36	--	--	--	--	--	--	--				

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**95916**	**95917**	**95918**	**95919**	**95920**	**95921**	**95922**	**95923**	**95924**	**95925**
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		23/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	23/6/07
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of reported PAHs	--	--	--	--	--	--	--	--	--	--	--
2-FBP (Surr @ 5mg/kg)	--	*96%*	*98%*	*89%*	*83%*	*81%*	*82%*	*84%*	*81%*	*84%*	*96%*
TP-d14 (Surr @ 5mg/kg)	--	*94%*	*95%*	*96%*	*93%*	*98%*	*87%*	*94%*	*83%*	*92%*	*97%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**95926**	**95927**	**95928**	**95929**	**95930**	**95931**	**95932**	**95933**	**95934**	**95917d**
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	IF/QS3	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	23/6/07	24/6/07
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of reported PAHs	--	--	--	--	--	--	--	--	--	--	--
2-FBP (Surr @ 5mg/kg)	--	*94%*	*90%*	*80%*	*90%*	*87%*	*82%*	*82%*	*83%*	*86%*	*87%*
TP-d14 (Surr @ 5mg/kg)	--	*92%*	*93%*	*90%*	*95%*	*84%*	*87%*	*90%*	*102%*	*85%*	*94%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**95917r**	**95929d**	**95929r**	**95918s**	**lcs**	**mb**				
Sample Identification		QC	QC	QC	QC	QC	QC				
Depth (m)		--	--	--	--	--	--				
Sampling Date recorded on COC		--	--	--	--	--	--				
Laboratory Extraction (Preparation) Date		--	22/6/07	--	22/6/07	22/6/07	22/6/07				
Laboratory Analysis Date		--	24/6/07	--	24/6/07	23/6/07	23/6/07				
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	--	<0.5	--	95%	97%	<0.5				
Acenaphthylene	0.5	--	<0.5	--	91%	94%	<0.5				
Acenaphthene	0.5	--	<0.5	--	91%	90%	<0.5				
Fluorene	0.5	--	<0.5	--	92%	91%	<0.5				
Phenanthrene	0.5	--	<0.5	--	83%	91%	<0.5				
Anthracene	0.5	--	<0.5	--	90%	96%	<0.5				
Fluoranthene	0.5	--	<0.5	--	88%	93%	<0.5				
Pyrene	0.5	--	<0.5	--	88%	99%	<0.5				
Benz(a)anthracene	0.5	--	<0.5	--	81%	85%	<0.5				
Chrysene	0.5	--	<0.5	--	97%	98%	<0.5				
Benzo(b)&(k)fluoranthene	1	--	<1	--	82%	94%	<1				
Benzo(a) pyrene	0.5	--	<0.5	--	105%	91%	<0.5				
Indeno(1,2,3-c,d)pyrene	0.5	--	<0.5	--	86%	93%	<0.5				
Dibenz(a,h)anthracene	0.5	--	<0.5	--	85%	91%	<0.5				
Benzo(g,h,i)perylene	0.5	--	<0.5	--	77%	90%	<0.5				
Sum of reported PAHs	--	--	--	--	--	--	--				
2-FBP (Surr @ 5mg/kg)	--	*12%*	*85%*	*6%*	*92%*	*99%*	*92%*				
TP-d14 (Surr @ 5mg/kg)	--	*1%*	*101%*	*6%*	*85%*	*92%*	*103%*				

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**95916**	**95917**	**95918**	**95919**	**95920**	**95921**	**95922**	**95923**	**95924**	**95925**
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		23/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	23/6/07
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-&4-methylphenol	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
2-nitrophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chloro-3-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum of reported phenols	--	--	--	--	--	--	--	--	--	--	--
2-FP (Surr @ 5mg/kg)	--	*95%*	*93%*	*86%*	*86%*	*84%*	*82%*	*96%*	*81%*	*87%*	*100%*
Phenol-d5 (Surr @ 5mg/kg)	--	*92%*	*88%*	*87%*	*82%*	*87%*	*84%*	*85%*	*83%*	*86%*	*92%*
2,4,6-TBP (Surr @ 5mg/kg)	--	*76%*	*86%*	*89%*	*78%*	*80%*	*79%*	*66%*	*72%*	*72%*	*79%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**95926**	**95927**	**95928**	**95929**	**95930**	**95931**	**95932**	**95933**	**95917d**	**95917r**
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--	--
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	--
Laboratory Analysis Date		24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	24/6/07	--
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
2-chlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
2-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
3-&4-methylphenol	1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	--
2-nitrophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
2,4-dimethylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
2,4-dichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
4-chloro-3-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
2,4,6-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
2,4,5-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	--
Pentachlorophenol	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	--
Sum of reported phenols	--	--	--	--	--	--	--	--	--	--	--
2-FP (Surr @ 5mg/kg)	--	*83%*	*83%*	*83%*	*91%*	*82%*	*81%*	*85%*	*87%*	*77%*	*19%*
Phenol-d5 (Surr @ 5mg/kg)	--	*87%*	*82%*	*83%*	*90%*	*79%*	*83%*	*84%*	*87%*	*82%*	*7%*
2,4,6-TBP (Surr @ 5mg/kg)	--	*78%*	*73%*	*70%*	*72%*	*80%*	*76%*	*76%*	*81%*	*78%*	*10%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**95929d**	**95929r**	**95918s**	**lcs**	**mb**					
Sample Identification		QC	QC	QC	QC	QC					
Depth (m)		--	--	--	--	--					
Sampling Date recorded on COC		--	--	--	--	--					
Laboratory Extraction (Preparation) Date		22/6/07	--	22/6/07	22/6/07	22/6/07					
Laboratory Analysis Date		24/6/07	--	24/6/07	23/6/07	23/6/07					
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	--	90%	93%	<0.5					
2-chlorophenol	0.5	<0.5	--	85%	96%	<0.5					
2-methylphenol	0.5	<0.5	--	87%	93%	<0.5					
3-&4-methylphenol	1.0	<1.0	--	96%	106%	<1.0					
2-nitrophenol	0.5	<0.5	--	57%	96%	<0.5					
2,4-dimethylphenol	0.5	<0.5	--	79%	90%	<0.5					
2,4-dichlorophenol	0.5	<0.5	--	87%	86%	<0.5					
4-chloro-3-methylphenol	0.5	<0.5	--	87%	99%	<0.5					
2,4,6-trichlorophenol	0.5	<0.5	--	86%	88%	<0.5					
2,4,5-trichlorophenol	0.5	<0.5	--	88%	82%	<0.5					
Pentachlorophenol	1	<1	--	78%	80%	<1					
Sum of reported phenols	--	--	--	--	--	--					
2-FP (Surr @ 5mg/kg)	--	*80%*	*13%*	*83%*	*89%*	*85%*					
Phenol-d5 (Surr @ 5mg/kg)	--	*83%*	*8%*	*91%*	*92%*	*86%*					
2,4,6-TBP (Surr @ 5mg/kg)	--	*75%*	*4%*	*83%*	*90%*	*81%*					

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**95916**	**95925**	**lcs**	**mb**						
Sample Identification		IF-23	IF-32	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		18/6/07	18/6/07	--	--						
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07						
Laboratory Analysis Date		27/6/07	27/6/07	26/6/07	26/6/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
Volatile Aromatic Compounds											
Benzene	0.5	<0.5	<0.5	103%	<0.5						
Toluene	0.5	<0.5	<0.5	111%	<0.5						
Ethylbenzene	0.5	<0.5	<0.5	103%	<0.5						
m- & p-xylene	1	<1	<1	101%	<1						
o-xylene	0.5	<0.5	<0.5	98%	<0.5						
Styrene	0.5	<0.5	<0.5	104%	<0.5						
Isopropylbenzene	0.5	<0.5	<0.5	99%	<0.5						
n-propylbenzene	0.5	<0.5	<0.5	99%	<0.5						
1,3,5-trimethylbenzene	0.5	<0.5	<0.5	96%	<0.5						
sec-butylbenzene	0.5	<0.5	<0.5	97%	<0.5						
1,2,4-trimethylbenzene	0.5	<0.5	<0.5	99%	<0.5						
tert-butylbenzene	0.5	<0.5	<0.5	98%	<0.5						
p-isopropyltoluene	0.5	<0.5	<0.5	96%	<0.5						
n-butylbenzene	0.5	<0.5	<0.5	97%	<0.5						
Naphthalene	0.5	<0.5	<0.5	107%	<0.5						
Halogenated Aliphatics											
Dichlorodifluoromethane	5	<5	<5	119%	<5						
Chloromethane	5	<5	<5	102%	<5						
Vinyl chloride	5	<5	<5	111%	<5						
Bromomethane	5	<5	<5	106%	<5						
Chloroethane	5	<5	<5	108%	<5						
Trichlorofluoromethane	5	<5	<5	116%	<5						
1,1-dichloroethene	0.5	<0.5	<0.5	119%	<0.5						
trans-1,2-dichloroethene	0.5	<0.5	<0.5	102%	<0.5						
1,1-dichloroethane	0.5	<0.5	<0.5	97%	<0.5						
cis-1,2-dichloroethene	0.5	<0.5	<0.5	97%	<0.5						

Laboratory Identification		**95916**	**95925**	**lcs**	**mb**						
Sample Identification		IF-23	IF-32	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		18/6/07	18/6/07	--	--						
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07						
Laboratory Analysis Date		27/6/07	27/6/07	26/6/07	26/6/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
2,2-dichloropropane	0.5	<0.5	<0.5	103%	<0.5						
Chloroform	0.5	<0.5	<0.5	104%	<0.5						
1,1,1-trichloroethane	0.5	<0.5	<0.5	103%	<0.5						
1,2-dichloroethane	0.5	<0.5	<0.5	110%	<0.5						
1,1-dichloropropene	0.5	<0.5	<0.5	102%	<0.5						
Carbon tetrachloride	0.5	<0.5	<0.5	103%	<0.5						
Trichloroethene	0.5	<0.5	<0.5	108%	<0.5						
1,2-dichloropropane	0.5	<0.5	<0.5	104%	<0.5						
Dibromomethane	0.5	<0.5	<0.5	113%	<0.5						
Bromodichloromethane	0.5	<0.5	<0.5	107%	<0.5						
cis-1,3-dichloropropene	0.5	<0.5	<0.5	111%	<0.5						
trans-1,3-dichloropropene	0.5	<0.5	<0.5	106%	<0.5						
1,1,2-trichloroethane	0.5	<0.5	<0.5	114%	<0.5						
1,3-dichloropropane	0.5	<0.5	<0.5	116%	<0.5						
Chlorodibromomethane	0.5	<0.5	<0.5	122%	<0.5						
Tetrachloroethene	0.5	0.6	0.7	108%	<0.5						
1,2-dibromoethane	0.5	<0.5	<0.5	117%	<0.5						
1,1,1,2-tetrachloroethane	0.5	<0.5	<0.5	98%	<0.5						
Bromoform	0.5	<0.5	<0.5	107%	<0.5						
1,1,2,2-tetrachloroethane	0.5	<0.5	<0.5	106%	<0.5						
1,2,3-trichloropropane	0.5	<0.5	<0.5	110%	<0.5						
1,2-dibromo-3-chloropropane	0.5	<0.5	<0.5	110%	<0.5						
Hexachlorobutadiene	0.5	<0.5	<0.5	97%	<0.5						
Halogenated Aromatics											
Chlorobenzene	0.5	<0.5	<0.5	101%	<0.5						
Bromobenzene	0.5	<0.5	<0.5	100%	<0.5						
2-chlorotoluene	0.5	<0.5	<0.5	99%	<0.5						

Laboratory Identification		**95916**	**95925**	**lcs**	**mb**						
Sample Identification		IF-23	IF-32	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		18/6/07	18/6/07	--	--						
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07						
Laboratory Analysis Date		27/6/07	27/6/07	26/6/07	26/6/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
4-chlorotoluene	0.5	<0.5	<0.5	103%	<0.5						
1,3-dichlorobenzene	0.5	<0.5	<0.5	100%	<0.5						
1,4-dichlorobenzene	0.5	<0.5	<0.5	95%	<0.5						
1,2-dichlorobenzene	0.5	<0.5	<0.5	102%	<0.5						
1,2,4-trichlorobenzene	0.5	<0.5	<0.5	105%	<0.5						
1,2,3-trichlorobenzene	0.5	<0.5	<0.5	107%	<0.5						
Oxygenated Compounds											
Vinyl acetate	5	<5	<5	127%	<5						
Ethyl acetate	0.5	<0.5	<0.5	110%	<0.5						
tert-butylmethylether (TBME)	0.5	<0.5	<0.5	112%	<0.5						
Sulphonated Compounds											
Carbon disulfide	0.5	<0.5	<0.5	108%	<0.5						
Surrogate Standards											
BCP (Surr @ 20mg/kg)	--	*88%*	*87%*	*115%*	*110%*						
DCFB (Surr @ 20mg/kg)	--	*83%*	*85%*	*110%*	*97%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/MS. (NB) Acetone and Dichloromethane not reported unless requested.

Laboratory Identification		**95916**	**95917**	**95918**	**95919**	**95920**	**95921**	**95922**	**95923**	**95924**	**95925**
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
DBC (Surr @ 0.2mg/kg)	--	*104%*	*114%*	*106%*	*107%*	*104%*	*111%*	*105%*	*104%*	*87%*	*97%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**95926**	**95927**	**95928**	**95929**	**95930**	**95931**	**95932**	**95933**	**95917d**	**95917r**
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--	--
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	--
Laboratory Analysis Date		23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	23/6/07	--
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Hexachlorobenzene	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	--
4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--
Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	--
DBC (Surr @ 0.2mg/kg)	--	*94%*	*95%*	*98%*	*84%*	*89%*	*99%*	*101%*	*70%*	*102%*	*11%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**95929d**	**95929r**	**95918s**	**lcs**	**mb**					
Sample Identification		QC	QC	QC	QC	QC					
Depth (m)		--	--	--	--	--					
Sampling Date recorded on COC		--	--	--	--	--					
Laboratory Extraction (Preparation) Date		22/6/07	--	22/6/07	22/6/07	22/6/07					
Laboratory Analysis Date		23/6/07	--	23/6/07	23/6/07	23/6/07					
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	--	111%	108%	<0.05					
Hexachlorobenzene	0.05	<0.05	--	118%	115%	<0.05					
b-BHC	0.05	<0.05	--	109%	108%	<0.05					
g-BHC (Lindane)	0.05	<0.05	--	106%	105%	<0.05					
d-BHC	0.05	<0.05	--	110%	109%	<0.05					
Heptachlor	0.05	<0.05	--	102%	102%	<0.05					
Aldrin	0.05	<0.05	--	105%	104%	<0.05					
Heptachlor epoxide	0.05	<0.05	--	107%	106%	<0.05					
trans-chlordane	0.05	<0.05	--	109%	107%	<0.05					
Endosulfan I	0.05	<0.05	--	118%	114%	<0.05					
cis-chlordane	0.05	<0.05	--	120%	116%	<0.05					
Dieldrin	0.05	<0.05	--	109%	107%	<0.05					
4,4-DDE	0.05	<0.05	--	110%	107%	<0.05					
Endrin	0.05	<0.05	--	109%	110%	<0.05					
Endosulfan II	0.05	<0.05	--	112%	112%	<0.05					
4,4-DDD	0.05	<0.05	--	114%	111%	<0.05					
Endosulfan sulphate	0.05	<0.05	--	118%	118%	<0.05					
4,4-DDT	0.2	<0.2	--	95%	98%	<0.2					
Methoxychlor	0.2	<0.2	--	94%	99%	<0.2					
DBC (Surr @ 0.2mg/kg)	--	*72%*	*15%*	*104%*	*123%*	*118%*					

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**95916**	**95925**	**lcs**	**mb**						
Sample Identification		IF-23	IF-32	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		18/6/07	18/6/07	--	--						
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07						
Laboratory Analysis Date		23/6/07	23/6/07	23/6/07	23/6/07						
Method : E013.2											
Polychlorinated Biphenyls (PCB)	**EQL**										
Arochlor 1016	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1232	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1242	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1248	0.5	<0.5	<0.5	127%	<0.5						
Arochlor 1254	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1260	0.5	<0.5	<0.5	--	<0.5						
Sum of reported PCBs	--	--	--	--	--						
DBC (Surr @ 0.2mg/kg)	--	*104%*	*97%*	*116%*	*118%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**95916**	**95925**	**lcs**	**mb**						
Sample Identification		IF-23	IF-32	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		18/6/07	18/6/07	--	--						
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07						
Laboratory Analysis Date		23/6/07	23/6/07	23/6/07	23/6/07						
Method : E017.2											
Semivolatile Chlorinated Hydrocarbons	**EQL**										
1,3-dichlorobenzene	0.5	<0.5	<0.5	99%	<0.5						
1,4-dichlorobenzene	0.5	<0.5	<0.5	101%	<0.5						
1,2-dichlorobenzene	0.5	<0.5	<0.5	99%	<0.5						
Hexachloroethane	0.5	<0.5	<0.5	101%	<0.5						
1,2,4-trichlorobenzene	0.5	<0.5	<0.5	101%	<0.5						
Hexachloropropene	0.5	<0.5	<0.5	93%	<0.5						
Hexachlorobutadiene	0.5	<0.5	<0.5	98%	<0.5						
Hexachlorocyclopentadiene	2	<2	<2	84%	<2						
Pentachlorobenzene	0.5	<0.5	<0.5	100%	<0.5						
Hexachlorobenzene	0.5	<0.5	<0.5	103%	<0.5						
NB-d5 (Surr @ 5mg/kg)	--	*94%*	*94%*	*93%*	*92%*						
2-FBP (Surr @ 5mg/kg)	--	*96%*	*96%*	*96%*	*93%*						
TP-d14 (Surr @ 5mg/kg)	--	*94%*	*97%*	*98%*	*91%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E017.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/MS.

Laboratory Identification		95916	95917	95918	95919	95920	95921	95922	95923	95924	95925
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Laboratory Analysis Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	<0.05	0.05	0.06	<0.05	<0.05	<0.05	0.05	<0.05	<0.05	<0.05

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		95926	95927	95928	95929	95930	95931	95932	95933	95934	95917d
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	IF/QS3	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--
Laboratory Extraction (Preparation) Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Laboratory Analysis Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	26/6/07	25/6/07	25/6/07
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		**95917r**	**95929d**	**95929r**	**95918s**	**crm**	**lcs**	**mb**			
Sample Identification		QC	QC	QC	QC	QC	QC	QC			
Depth (m)		--	--	--	--	--	--	--			
Sampling Date recorded on COC		--	--	--	--	--	--	--			
Laboratory Extraction (Preparation) Date		--	25/6/07	--	25/6/07	25/6/07	25/6/07	25/6/07			
Laboratory Analysis Date		--	25/6/07	--	25/6/07	25/6/07	25/6/07	25/6/07			
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	>0%	<0.05	--	102%	102%	98%	<0.05			

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		**95935**	**lcs**	**mb**							
Sample Identification		IF/TB-2	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		18/6/07	--	--							
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07							
Laboratory Analysis Date		22/6/07	25/6/07	25/6/07							
Method : E026.1											
Filtered mercury	**EQL**										
Mercury	0.1	<0.1	93%	<0.1							

Results expressed in ug/l unless otherwise specified

Comments:

E026.1: Analysis by CV-ICP-MS or FIMS following BrCl pre-treatment.

Laboratory Identification		**95935**	**lcs**	**mb**							
Sample Identification		IF/TB-2	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		18/6/07	--	--							
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07							
Laboratory Analysis Date		22/6/07	23/6/07	23/6/07							
Method : E022.1											
Filtered metals	**EQL**										
Antimony	5	<5	102%	<5							
Arsenic	1	<1	98%	<1							
Barium	5	<5	98%	<5							
Beryllium	1	<1	97%	<1							
Boron	10	<10	97%	<10							
Cadmium	0.1	0.1	101%	<0.1							
Chromium	1	<1	102%	<1							
Cobalt	1	<1	98%	<1							
Copper	1	1	98%	<1							
Lead	1	<1	92%	<1							
Manganese	1	4	99%	<1							
Molybdenum	1	<1	101%	<1							
Nickel	1	<1	97%	<1							
Selenium	5	<5	100%	<5							
Tin	5	<5	102%	<5							
Vanadium	1	<1	97%	<1							
Zinc	5	<5	101%	<5							

Results expressed in ug/l unless otherwise specified

Comments:

E022.1: Filtered sample directly analysed by ICP-MS.

Laboratory Identification		**95916**	**95917**	**95918**	**95919**	**95920**	**95921**	**95922**	**95923**	**95924**	**95925**
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Laboratory Analysis Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	1	<1	1	2	<1	<1	<1	<1	2	5	2
Barium	5	365	459	139	616	296	616	306	469	413	692
Beryllium	1	1	1	<1	1	1	1	1	1	1	1
Boron	5	11	10	<5	9	10	7	5	8	10	7
Cadmium	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	1	35	39	27	31	34	25	25	35	49	32
Cobalt	1	18	15	17	23	15	16	11	24	23	21
Copper	2	9	11	10	9	9	8	7	11	13	10
Lead	2	11	12	12	12	10	11	10	11	13	9
Manganese	5	529	557	532	625	379	515	346	635	362	521
Molybdenum	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	1	18	27	17	17	18	19	16	30	25	28
Selenium	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	5	--	55	55	46	46	46	46	50	108	--
Zinc	5	18	22	9	15	16	13	12	18	18	16

Results expressed in mg/kg dry weight unless otherwise specified

Comments: - # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**95926**	**95927**	**95928**	**95929**	**95930**	**95931**	**95932**	**95933**	**95934**	**95917d**
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	IF/QS3	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--
Laboratory Extraction (Preparation) Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Laboratory Analysis Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	1	1	2	2	3	2	2	1	2	2	1
Barium	5	357	411	353	300	410	935	1050	555	338	467
Beryllium	1	1	<1	1	1	<1	1	1	1	1	1
Boron	5	10	7	7	8	5	17	24	26	27	5
Cadmium	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	1	48	30	27	40	23	56	74	79	70	25
Cobalt	1	14	23	27	24	17	25	25	43	27	12
Copper	2	12	11	10	14	9	12	16	18	14	9
Lead	2	10	9	10	12	8	10	11	12	12	10
Manganese	5	318	535	565	325	456	573	517	729	428	437
Molybdenum	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	1	27	28	20	22	23	44	45	50	35	18
Selenium	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	5	54	53	60	89	49	59	56	66	73	50
Zinc	5	19	15	11	17	11	25	33	39	32	13

Results expressed in mg/kg dry weight unless otherwise specified

Comments: - # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**95917r**	**95929d**	**95929r**	**95917t**	**95918s**	**crm**	**crm**	**lcs**	**lcs**	**mb**
Sample Identification		QC	QC	QC	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		--	--	--	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		--	25/6/07	--	26/6/07	25/6/07	25/6/07	26/6/07	25/6/07	26/6/07	25/6/07
Laboratory Analysis Date		--	25/6/07	--	27/6/07	25/6/07	25/6/07	27/6/07	25/6/07	27/6/07	25/6/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	--	<1	--	--	81%	--	--	103%	--	<1
Arsenic	1	0%	3	0%	--	62%	83%	--	101%	--	<1
Barium	5	2%	271	10%	--	#	76%	--	100%	--	<5
Beryllium	1	0%	<1	>0%	--	104%	95%	--	99%	--	<1
Boron	5	67%	7	13%	6	88%	--	106%	90%	96%	<5
Cadmium	0.1	--	<0.1	--	--	103%	107%	--	100%	--	<0.1
Chromium	1	44%	30	29%	22	160%	101%	110%	103%	90%	<1
Cobalt	1	22%	24	0%	--	76%	83%	--	102%	--	<1
Copper	2	20%	12	15%	--	86%	90%	--	102%	--	<2
Lead	2	18%	11	9%	--	115%	103%	--	104%	--	<2
Manganese	5	24%	327	1%	438	#	77%	88%	102%	92%	<5
Molybdenum	1	--	<1	--	--	85%	115%	--	99%	--	<1
Nickel	1	40%	20	10%	20	98%	91%	102%	103%	88%	<1
Selenium	2	--	<2	--	--	55%	82%	--	101%	--	<2
Tin	1	--	<1	--	--	150%	84%	--	102%	--	<1
Vanadium	5	10%	90	1%	--	#	74%	--	103%	--	<5
Zinc	5	51%	12	34%	11	133%	98%	97%	99%	90%	<5

Results expressed in mg/kg dry weight unless otherwise specified

Comments: - # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**mb**									
Sample Identification		QC									
Depth (m)		--									
Sampling Date recorded on COC		--									
Laboratory Extraction (Preparation) Date		26/6/07									
Laboratory Analysis Date		27/6/07									
Method : E022.2											
Acid extractable metals	**EQL**										
Boron	5	<5									
Chromium	1	<1									
Manganese	5	<5									
Nickel	1	<1									
Zinc	5	<5									

Results expressed in mg/kg dry weight unless otherwise specified

Comments: - # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**95916**	**95917**	**95918**	**95919**	**95920**	**95921**	**95922**	**95923**	**95924**	**95925**
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	9.5	9.3	9.1	9.4	9.5	9.4	9.5	9.2	9.4	9.4

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		**95926**	**95927**	**95928**	**95929**	**95930**	**95931**	**95932**	**95933**	**95917d**	**95917r**
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--	--
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	--
Laboratory Analysis Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	--
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	9.6	9.4	9.4	9.5	9.4	9.4	9.3	9.5	9.3	0%

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		**95929d**	**95929r**								
Sample Identification		QC	QC								
Depth (m)		--	--								
Sampling Date recorded on COC		--	--								
Laboratory Extraction (Preparation) Date		22/6/07	--								
Laboratory Analysis Date		22/6/07	--								
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	9.4	1%								

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		**95916**	**95925**	**lcs**	**mb**						
Sample Identification		IF-23	IF-32	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		18/6/07	18/6/07	--	--						
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07						
Laboratory Analysis Date		25/6/07	25/6/07	22/6/07	22/6/07						
Method : E034.2/E045.2											
Fluoride	**EQL**										
Fluoride	1	16	15	94%	<1						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.

Laboratory Identification		**95916**	**95925**	**lcs**	**mb**						
Sample Identification		IF-23	IF-32	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		18/6/07	18/6/07	--	--						
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07						
Laboratory Analysis Date		26/6/07	26/6/07	26/6/07	26/6/07						
Method : E040.2/E054.2											
Total Cyanide	**EQL**										
Total Cyanide	1	<1	<1	86%	<1						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E040.2/E054.2: Caustic extract followed by strong acid distillion. Analysis by colour.

Laboratory Identification		**95916**	**95917**	**95918**	**95919**	**95920**	**95921**	**95922**	**95923**	**95924**	**95925**
Sample Identification		IF-23	IF-24	IF-25	IF-26	IF-27	IF-28	IF-29	IF-30	IF-31	IF-32
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Method : E005.2											
Moisture	**EQL**										
Moisture	--	25	26	24	21	24	24	23	23	22	25

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Laboratory Identification		**95926**	**95927**	**95928**	**95929**	**95930**	**95931**	**95932**	**95933**	**95934**	**95917d**
Sample Identification		IF-33	IF-34	IF-35	IF-36	IF-37	IF-38	IF-39	IF-40	IF/QS3	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	18/6/07	--
Laboratory Extraction (Preparation) Date		22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07	22/6/07
Laboratory Analysis Date		25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07	25/6/07
Method : E005.2											
Moisture	**EQL**										
Moisture	--	30	20	26	25	25	19	26	27	23	20

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Final
Certificate of Analysis

Laboratory Identification		**95917r**	**95929d**	**95929r**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		--	22/6/07	--							
Laboratory Analysis Date		--	25/6/07	--							
Method : E005.2											
Moisture	**EQL**										
Moisture	--	26%	26	4%							

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Quality, Service, Support

Report Date : 21/06/2007
Report Time : 10:26:03AM

Sample **Receipt** Notice (SRN) for **E032582**

Client Details		Laboratory Reference Information	
Client Name:	OTEK Australia Pty Ltd	**Please have this information ready when contacting Labmark.**	
Client Phone:	03 9525 5155		
Client Fax:	03 9593 8555	**Laboratory Report:**	**E032582**
Contact Name:	Tom Santwyk-Anderson	**Quotation Number:**	Q0148.EM
Contact Email:	tsantwyk-anderson@otek.com.au	**Laboratory Address:**	Unit 1, 8 Leighton Pl. Asquith NSW 2077
Client Address:	Level 1, 222 St. Kilda Rd St.Kilda VIC 3182	**Phone:**	61 2 9476 6533
		Fax:	61 2 9476 8219
Project Name:	Werribee Area 4	**Sample Receipt Contact:**	Jakleen El Galada
Project Number:	3106004	**Email:**	jakleen.galada@labmark.com.au
CoC Number:	- Not provided -	**Reporting Contact:**	Jyothi Lal
Purchase Order:	30946	**Email:**	jyothi.lal@labmark.com.au
Surcharge:	No surcharge applied (results by 6:30pm on due date)		
Sample Matrix:	SOIL & WATER		
Date Sampled (earliest date):	18/06/2007	**NATA Accreditation:**	13542
Date Samples Received:	18/06/2007	**TGA GMP License:**	185-336 (Sydney)
Date Sample Receipt Notice issued:	21/06/2007	**APVMA License:**	6105 (Sydney)
Date Preliminary Report Due:	25/06/2007	**AQIS Approval:**	NO356 (Sydney)
		AQIS Entry Permit:	200521534 (Sydney)

Reporting Requirements: Electronic Data Download required: No

Sample Condition: COC received with samples. Report number and lab ID's defined on COC.
Samples received in good order .
Samples received with cooling media: Crushed ice .
Samples received chilled.
Security seals not used .
Sample container & chemical preservation suitable .

Comments: Sample QS-3A forwarded to ALS. Metals and Nutrient results will be delayed.

Holding Times: Date received allows for sufficient time to meet Technical Holding Times.

Preservation: Chemical preservation of samples satisfactory for requested analytes.

Important Notes:

LabMark shall responsibly dispose of spent customer soil and water samples which includes the disintegration of the sample label. A sample disposal fee of $1.00 is applicable on all samples received by the laboratory regardless of whether they have undergone analytical testing. Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur $5.00/ sample/ 3 months. Additional refrigerated storage shall incur $30/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

VOC E016.2: Acetone and Dichloromethane not reported unless requested.

Subcontracted Analyses:

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Report Date : 21/06/2007
Report Time : 10:26:03AM

Quality, Service, Support

Sample **Receipt** Notice (SRN) for **E032582**

The table below represents LabMark's understanding and interpretation of the customer supplied sample COC request. Please confirm that your COC request has been entered correctly. Due to THT and TAT requirements, testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

GRID REVIEW TABLE

				Requested Analysis																			
No.	**Date**	**Depth**	**Client Sample ID**	Fluoride	Filtered mercury	Acid extractable mercury	Filtered metals	Acid extractable metals	Moisture	Organochlorine Pesticides (OC)	Polyaromatic Hydrocarbons (PAH)	Polychlorinated Biphenyls (PCB)	pH in soil	Phenols by GC/MS	PREP Not Reported	PREP Not Reported	Semivolatile Chlorinated Hydrocarbons	Total Cyanide	Petroleum Hydrocarbons (TPH)	Volatile Organic Compounds (VOC)	Volatile TPH by P&T (vTPH)		
95916	18/06		IF-23	●		●		●	●	●	●	●	●	●	●		●	●	●	●	●		
95917	18/06		IF-24			●		●	●	●	●		●	●	●				●		●		
95918	18/06		IF-25			●		●	●	●	●		●	●	●				●		●		
95919	18/06		IF-26			●		●	●	●	●		●	●	●				●		●		
95920	18/06		IF-27			●		●	●	●	●		●	●	●				●		●		
95921	18/06		IF-28			●		●	●	●	●		●	●	●				●		●		
95922	18/06		IF-29			●		●	●	●	●		●	●	●				●		●		
95923	18/06		IF-30			●		●	●	●	●		●	●	●				●		●		
95924	18/06		IF-31			●		●	●	●	●		●	●	●				●		●		
95925	18/06		IF-32	●		●		●	●	●	●	●	●	●	●		●	●	●	●	●		
95926	18/06		IF-33			●		●	●	●	●		●	●	●				●		●		
95927	18/06		IF-34			●		●	●	●	●		●	●	●				●		●		
95928	18/06		IF-35			●		●	●	●	●		●	●	●				●		●		
95929	18/06		IF-36			●		●	●	●	●		●	●	●				●		●		
95930	18/06		IF-37			●		●	●	●	●		●	●	●				●		●		
95931	18/06		IF-38			●		●	●	●	●		●	●	●				●		●		
95932	18/06		IF-39			●		●	●	●	●		●	●	●				●		●		
95933	18/06		IF-40			●		●	●	●	●		●	●	●				●		●		
95934	18/06		IF/QS3			●		●	●		●				●				●		●		
95935	18/06		IF/TB-2		●		●									●							
			Totals:	2	1	19	1	19	19	18	19	2	18	18	19	1	2	2	19	2	19		

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Quality, Service, Support

Report Date : 21/06/2007
Report Time : 10:26:03AM

Sample **Receipt** Notice (SRN) for **E032582**

No.	Date	Depth	Client Sample ID	Requested Analysis																			
				M17 - MET-F_W	M17 - MET-T_S	MET-F_W Vanadium	MET-T_S Vanadium																
95916	18/06		IF-23		●																		
95917	18/06		IF-24		●		●																
95918	18/06		IF-25		●		●																
95919	18/06		IF-26		●		●																
95920	18/06		IF-27		●		●																
95921	18/06		IF-28		●		●																
95922	18/06		IF-29		●		●																
95923	18/06		IF-30		●		●																
95924	18/06		IF-31		●		●																
95925	18/06		IF-32		●																		
95926	18/06		IF-33		●		●																
95927	18/06		IF-34		●		●																
95928	18/06		IF-35		●		●																
95929	18/06		IF-36		●		●																
95930	18/06		IF-37		●		●																
95931	18/06		IF-38		●		●																
95932	18/06		IF-39		●		●																
95933	18/06		IF-40		●		●																
95934	18/06		IF/QS3		●		●																
95935	18/06		IF/TB-2	●		●																	
			Totals:	1	19	1	17																

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

FAXED 18/6/07 9AM

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Lvl 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to vicreception@otek.com.au & _____@otek.com.au

OTEK AUSTRALIA PTY LTD

LAB	Labmark
ADDRESS	116 Moray St, South Melbourne VIC
LAB CONTACT	Paul Woodward
PHONE	9686 8344

Page 1 of

PROJECT #	3106004
PROJECT NAME	Werribee Area 4
COLLECTORS NAME	Tom Santwyk-Anderson, tsantwyk-anderson@otek.com.au
LAB JOB #	E032582

PRELIM. RESULTS BY: 25/6/07 — VERBAL ☐ FAX ☑ EMAIL ☑

FINAL REPORT BY: 25/6/07

LAB QUOTE REF: Q0148.EM

OTEK PO No.: 30946

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: TPH (C_6-C_{36})/BTEX	TPH (C_6-C_{36})/BTEX/Pb	TPH (C_6-C_{36})	OCP	BTEX (Purge & Trap)	Lead	PAH	Benzo(a)pyrene to 0.01µg/l	Total Phenols	Full VIC EPA Screen	Phenols	Metals (As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn)	Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	OCs/OPs/PCBs	Asbestos	Ecoli	pH	REMARKS
IF-23	-	95916		X			X				18.6.07	2										X							X
IF-24	-	95917		X			X					1			X	X			X				X	X					X
IF-25	-	95918		X			X					1			X	X			X				X	X					X
IF-26	-	95919		X			X					1			X	X			X				X	X					X
IF-27	-	95920		X			X					1			X	X			X				X	X					X
IF-28	-	95921		X			X					1			X	X			X				X	X					X
IF-29	-	95922		X			X					1			X	X			X				X	X					X
IF-30	-	95923		X			X					1			X	X			X				X	X					X
IF-31	-	95924		X			X					1			X	X			X				X	X					X
IF-32	-	95925		X			X					2										X							X
IF-33	-	95926		X			X					1			X	X			X				X	X					X
IF-34	-	95927		X			X					1			X	X			X				X	X					X
IF-35	-	95928		X			X					1			X	X			X				X	X					X
IF-36	-	95929		X			X					1			X	X			X				X	X					X
IF-37	-	95930		X			X					1			X	X			X				X	X					X
IF-38	-	95931		X			X					1			X	X			X				X	X					X
IF-39	-	95932		X			X					1			X	X			X				X	X					X
IF-40	-	95933		X			X					1			X	X			X				X	X					X
IF/QS-3	-	95934		X			X					1			X				X					X					
IF/TB-2	-	95935	X				X					1												X					
This Page				19	0	0	20	0	0	0		20	0	0	17	16	0	0	17	0	0	2	16	18	0	0	0	0	18

Relinquished by:	Date: 18/6/07	Time: 14:00	Received by: IAN, LARSHIRA	Date: 18/6/07	Time: 4PM
Relinquished by:	Date:	Time: 18/6/07	Received by:	Date: 20/6/07	Time: 11am

Custody Seals Intact? Yes / No (NA)

Samples Received Chilled? (Yes) / No

Additional Comments:

SA 20/06

ALS Environmental

INTERPRETIVE QUALITY CONTROL REPORT

Client	:	**OTEK**	**Laboratory**	:	Environmental Division Melbourne	**Page**	: **1 of 5**
Contact	:	MR TOM SANTWYK-ANDERSON	**Contact**	:	Paul Loewy		
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182	**Address**	:	4 Westall Rd Springvale VIC Australia 3171	**Work order**	: **EM0704494**
						Amendment No.	:
Project	:	3106004	**Quote number**	:	ME/022a/06	**Date received**	: 19 Jun 2007
Order number	:	30947				**Date issued**	: 25 Jun 2007
C-O-C number	:	- Not provided -					
Site	:	WERRIBEE AREA 4					
E-mail	:	tsantwyk-anderson@otek.com.au	**E-mail**	:	paul.loewy@alsenviro.com	**No. of samples**	
Telephone	:	9525 5155	**Telephone**	:	61-3-8549 9600	**Received**	: 1
Facsimile	:	9593 8555	**Facsimile**	:	61-3-8549 9601	**Analysed**	: 1

This Interpretive Quality Control Report was issued on 25 Jun 2007 for the ALS work order reference EM0704494 and supersedes any previous reports with this reference.
This report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Type Frequency Compliance
- Summary of all Quality Control Outliers
- Brief Method Summaries

Interpretive Quality Control Report - Analysis Holding Time

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the sample aliquot was taken. Elapsed time to analysis represents time from sampling where no extraction / digestion is involved or time from extraction / digestion where this is present. For composite samples, sampling date/time is taken as that of the oldest sample contributing to that composite. Sample date/time for laboratory produced leaches are taken from the completion date/time of the leaching process. Outliers for holding time are based on USEPA SW846, APHA, AS and NEPM (1999). Failed outliers, refer to the 'Summary of Outliers'.

Matrix Type: SOIL ***Analysis Holding Time and Preservation***

Method / **Container /** Client Sample ID(s)	**Date Sampled**	**Extraction / Preparation**			**Analysis**		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
EA055-103: Moisture Content							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	----	----	----	**22 Jun 2007**	25 Jun 2007	Pass
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**25 Jun 2007**	15 Dec 2007	Pass	**25 Jun 2007**	15 Dec 2007	Pass
EG035T: Total Mercury by FIMS							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**25 Jun 2007**	16 Jul 2007	Pass	**25 Jun 2007**	16 Jul 2007	Pass
EP071: TPH - Semivolatile Fraction							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**21 Jun 2007**	2 Jul 2007	Pass	**21 Jun 2007**	31 Jul 2007	Pass
EP075(SIM): PAH/Phenols (SIM)							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**21 Jun 2007**	2 Jul 2007	Pass	**21 Jun 2007**	31 Jul 2007	Pass
EP080: TPH Volatiles/BTEX							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**22 Jun 2007**	2 Jul 2007	Pass	**22 Jun 2007**	2 Jul 2007	Pass

Interpretive Quality Control Report - Frequency of Quality Control Samples

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which this work order was processed. Actual rate should be greater than or equal to the expected rate.

Matrix Type: SOIL ***Frequency of Quality Control Samples***

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
EA055-103: Moisture Content	2	20	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG005T: Total Metals by ICP-AES	2	20	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	2	18	**11.1**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	10	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	10	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	1	**100.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Laboratory Control Samples (LCS)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	18	**5.6**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	1	**100.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Method Blanks (MB)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	18	**5.6**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	1	**100.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Matrix Spikes (MS)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	18	**5.6**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement

Interpretive Quality Control Report - Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged on the 'Quality Control Report'. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot.

Non-surrogates

ALS QC Lot	Matrix Type	Laboratory Sample ID	Client Sample ID	Analyte	Data	Limits	Comment
Matrix Spikes (MS)							
EG005T: Total Metals by ICP-AES	SOIL	EM0704438-011	Anonymous	Molybdenum	63.8 %	70-130 %	Recovery less than lower data quality objective
				Zinc	ND	----	MS recovery not determined, background level greater than or equal to 4x spike level.

- **For all matrices, no RPD recovery outliers occur for the duplicate analysis.**
- **For all matrices, no method blank result outliers occur.**
- **For all matrices, no laboratory spike recoveries breaches occur.**

Surrogates

- **For all matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time

The following report highlights outliers within this 'Interpretive Quality Control Report - Analysis Holding Time'.

- **No holding time outliers occur.**

Outliers : Frequency of Quality Control Samples

The following report highlights outliers within this 'Interpretive Quality Control Report - Frequency of Quality Control Samples'.

- **No frequency outliers occur.**

Method Reference Summary

The analytical procedures used by ALS Environmental are based on established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house procedure are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

Matrix Type: SOIL ***Method Reference Summary***

Preparation Methods

EN69 : Hot Block Digest for metals in soils sediments and sludges - USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)

ORG16 : Methanolic Extraction of Soils for Purge and Trap - (USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

ORG17B : Tumbler Extraction of Solids (Option B - Non-concentrating) - In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.

Analytical Methods

EA055-103 : Moisture Content - A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)

EG005T : Total Metals by ICP-AES - (APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)

EG035T : Total Mercury by FIMS - AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)

EP071 : TPH - Semivolatile Fraction - (USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)

EP075(SIM) : PAH/Phenols (SIM) - (USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)

EP080 : TPH Volatiles/BTEX - (USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)

ALS Environmental

CERTIFICATE OF ANALYSIS

Client	: **OTEK**	*Laboratory*	: **Environmental Division Melbourne**	*Page*	: **1 of 5**
Contact	: **MR TOM SANTWYK-ANDERSON**	*Contact*	: **Paul Loewy**	*Work Order*	: **EM0704494**
Address	: **LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182**	*Address*	: **4 Westall Rd Springvale VIC Australia 3171**		
E-mail	: **tsantwyk-anderson@otek.com.au**	*E-mail*	: **paul.loewy@alsenviro.com**		
Telephone	: **9525 5155**	*Telephone*	: **61-3-8549 9600**		
Facsimile	: **9593 8555**	*Facsimile*	: **61-3-8549 9601**		
Project	: **3106004**	*Quote number*	: **ME/022a/06**	*Date received*	: **19 Jun 2007**
Order number	: **30947**			*Date issued*	: **25 Jun 2007**
C-O-C number	: **- Not provided -**			*No. of samples*	- *Received* : **1**
Site	: **WERRIBEE AREA 4**				*Analysed* : **1**

ALSE - Excellence in Analytical Testing

NATA Accredited Laboratory 825

This document is issued in accordance with NATA's accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatory	*Position*	*Department*
Herman Lin	**Senior Inorganic Chemist**	**Inorganics - NATA 825 (13778 - Melbourne)**
Steven McGrath	**Senior Organic Chemist**	**Organics - NATA 825 (13778 - Melbourne)**

ALS Environmental

Comments

This report for the ALSE reference EM0704494 supersedes any previous reports with this reference. Results apply to the sample as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- **Analytical Results for Samples Submitted**
- **Surrogate Recovery Data**

The analytical procedures used by ALS Environmental have been developed from established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

When moisture determination has been performed, results are reported on a dry weight basis. When a reported 'less than' result is higher than the LOR, this may be due to primary sample extracts/digestion dilution and/or insuffient sample amount for analysis. Surrogate Recovery Limits are static and based on USEPA SW846 or ALS-QWI/EN38 (in the absence of specified USEPA limits). Where LOR of reported result differ from standard LOR, this may be due to high moisture, reduced sample amount or matrix interference. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number, LOR = Limit of Reporting. * Indicates failed Surrogate Recoveries.

Specific comments for Work Order **EM0704494**

EG005T : EM0704438 #11 matrix spike failed for Molybdenum due to sample matrix interference.

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Analytical Results

				Client Sample ID :	IF/QS-3A			
				Sample Matrix Type / Description :	SOIL			
				Sample Date / Time :	18 Jun 2007 15:00			
				Laboratory Sample ID :	EM0704494-001			
Analyte	*CAS number*	*LOR*	*Units*					
EA055: Moisture Content								
Moisture Content (dried @ 103°C)		1.0	%		24.2			
EG005T: Total Metals by ICP-AES								
Antimony	7440-36-0	5	mg/kg		<5			
Arsenic	7440-38-2	5	mg/kg		<5			
Barium	7440-39-3	10	mg/kg		300			
Beryllium	7440-41-7	1	mg/kg		1			
Boron	7440-42-8	50	mg/kg		60			
Cadmium	7440-43-9	1	mg/kg		<1			
Chromium	7440-47-3	2	mg/kg		38			
Cobalt	7440-48-4	2	mg/kg		14			
Copper	7440-50-8	5	mg/kg		10			
Lead	7439-92-1	5	mg/kg		9			
Manganese	7439-96-5	5	mg/kg		250			
Molybdenum	7439-98-7	2	mg/kg		<2			
Nickel	7440-02-0	2	mg/kg		17			
Selenium	7782-49-2	5	mg/kg		<5			
Tin	7440-31-5	5	mg/kg		<5			
Vanadium	7440-62-2	5	mg/kg		46			
Zinc	7440-66-6	5	mg/kg		15			
EG035T: Total Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg		<0.1			
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg		<0.5			
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5			
Acenaphthene	83-32-9	0.5	mg/kg		<0.5			
Fluorene	86-73-7	0.5	mg/kg		<0.5			
Phenanthrene	85-01-8	0.5	mg/kg		<0.5			
Anthracene	120-12-7	0.5	mg/kg		<0.5			
Fluoranthene	206-44-0	0.5	mg/kg		<0.5			
Pyrene	129-00-0	0.5	mg/kg		<0.5			
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5			
Chrysene	218-01-9	0.5	mg/kg		<0.5			
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg		<0.5			
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5			
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5			
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5			
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5			

ALS Environmental

Analytical Results

				Client Sample ID :	IF/QS-3A			
				Sample Matrix Type / Description :	SOIL			
				Sample Date / Time :	18 Jun 2007 15:00			
				Laboratory Sample ID :	EM0704494-001			
Analyte	*CAS number*	*LOR*	*Units*					
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5			
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction		10	mg/kg		<10			
C10 - C14 Fraction		50	mg/kg		<50			
C15 - C28 Fraction		100	mg/kg		<100			
C29 - C36 Fraction		100	mg/kg		<100			
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%		108			
2-Chlorophenol-D4	93951-73-6	0.1	%		106			
2.4.6-Tribromophenol	118-79-6	0.1	%		102			
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%		113			
Anthracene-d10	1719-06-8	0.1	%		95.5			
4-Terphenyl-d14	1718-51-0	0.1	%		120			
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%		82.0			
Toluene-D8	2037-26-5	0.1	%		81.9			
4-Bromofluorobenzene	460-00-4	0.1	%		80.2			

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Surrogate Control Limits

Matrix Type: SOIL - Surrogate Control Limits ***Surrogate Control Limits***

Method name	*Analyte name*	*Lower Limit*	*Upper Limit*
EP075(SIM): PAH/Phenols (SIM)			
EP075(SIM)S: Phenolic Compound Surrogates	Phenol-d6		
	2-Chlorophenol-D4		
	2,4,6-Tribromophenol		
EP075(SIM)T: PAH Surrogates	2-Fluorobiphenyl		
	Anthracene-d10		
	4-Terphenyl-d14		
EP080: TPH Volatiles/BTEX			
EP080S: TPH(V)/BTEX Surrogates	1,2-Dichloroethane-D4	70	130
	Toluene-D8	70	130
	4-Bromofluorobenzene	70	130

AUSTRALIAN LABORATORY SERVICES PTY LTD ABN 84 009 936 029
4 Westall Rd Springvale VIC 3171 Australia
Telephone: 61-3-8549 9600 Facsimile: 61-3-8549 9601 http://www.alsenviro.com/

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive report

Client Details

Client	:	**OTEK**
Contact	:	**MR TOM SANTWYK-ANDERSON**
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182
Project	:	**3106004**
Order number	:	**30947**
C-O-C Number	:	**- Not provided -**
Site	:	**WERRIBEE AREA 4**
Sampler	:	**TSA**
E-mail	:	tsantwyk-anderson@otek.com.au
Telephone	:	9525 5155
Facsimile	:	9593 8555

Laboratory Details

Laboratory	:	**Environmental Division Melbourne**
Manager	:	**Paul Loewy**
Address	:	4 Westall Rd Springvale VIC Australia 3171
Quote number	:	----
Work order	:	**EM0704494**
E-mail	:	paul.loewy@alsenviro.com
Telephone	:	61-3-8549 9600
Facsimile	:	61-3-8549 9601

Dates

Date Samples Received	:	19 Jun 2007	**SRA Issue Date**	:	20 Jun 2007
Scheduled Reporting Date	:	**25 Jun 2007**	**Client Requested Date**	:	25 Jun 2007

Delivery Details

Mode of Delivery	:	Carrier.	**Temperature**		:	13 - Ice bricks present
No. of coolers/boxes	:	1	**No. of samples**	**- Received**		1
Security Seal	:	Intact.		**- Analysed**		1

Comments

- **Samples received in appropriately pretreated and preserved containers.**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALSE Melbourne.**
- **Sample(s) have been received within recommended holding times**

- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.
- When the sampling time is not supplied on the COC documentation, ALSE defaults the sampling time to that of the COC 'relinquishment' time (if supplied). If this also is not supplied, ALSE defaults the sampling time to the 'time of receipt at Laboratory'.

Client	: OTEK	**Work Order**	: EM0704494
Project	: 3106004	**ALS Quote Reference**	: ----

Summary of Sample(s) / Container(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as moisture and preparation tasks, that form an implicit part of that package.

ALS Sample ID.	Client Sample ID - Sample Date	**Requested Analysis**									
		EA055-103 - SOIL Moisture Content	**EG005T (solids) - SOIL** Total Metals by ICP-AES	**EP075 SIM PAH only - SOIL** SIM - PAH only	**S-03 - SOIL** 13 Metals (NEPM Suite - incl. Digestion)	**TPH only - SOIL** TPH (C6 - C36)					
EM0704494-001	**IF/QS-3A - 18 Jun 2007**	⌋	⌋	⌋	⌋	⌋					
	Total(s) :	**1**	**1**	**1**	**1**	**1**					

Client	: OTEK	**Work Order**	: EM0704494
Project	: 3106004	**ALS Quote Reference**	: ----

Requested Reports

l	**MR TOM SANTWYK-ANDERSON**		
-	A4 - AU Certificate of Analysis - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Quality Control Report - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Interpretive Quality Control Report - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	EDI Format - ENMRG	Email	tsantwyk-anderson@otek.com.au
-	Default - Chain of Custody	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Sample Receipt Notification - Comprehensive format	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Tax Invoice	Email	tsantwyk-anderson@otek.com.au
l	**MS CHANTEL WEBBER**		
-	A4 - AU Tax Invoice	Email	chantelwebber@otek.com.au
l	**RESULTS/INVOICE**		
-	A4 - AU Certificate of Analysis - NEPM format	Email	vicreception@otek.com.au
-	A4 - AU Quality Control Report - NEPM format	Email	vicreception@otek.com.au
-	A4 - AU Interpretive Quality Control Report - NEPM format	Email	vicreception@otek.com.au
-	EDI Format - ENMRG	Email	vicreception@otek.com.au
-	Default - Chain of Custody	Email	vicreception@otek.com.au
-	A4 - AU Sample Receipt Notification - Comprehensive format	Email	vicreception@otek.com.au
-	A4 - AU Tax Invoice	Email	vicreception@otek.com.au

Sample Container(s) / Preservation Non-Compliance Log

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

l **No sample container / preservation non-compliance exist.**

ALS Environmental

INTERPRETIVE QUALITY CONTROL REPORT

Client	:	**OTEK**	**Laboratory**	:	Environmental Division Melbourne	**Page**	: **1 of 5**
Contact	:	MR TOM SANTWYK-ANDERSON	**Contact**	:	Paul Loewy		
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182	**Address**	:	4 Westall Rd Springvale VIC Australia 3171	**Work order**	: **EM0704494**
						Amendment No.	:
Project	:	3106004	**Quote number**	:	ME/022a/06	**Date received**	: 19 Jun 2007
Order number	:	30947				**Date issued**	: 25 Jun 2007
C-O-C number	:	- Not provided -					
Site	:	WERRIBEE AREA 4					
E-mail	:	tsantwyk-anderson@otek.com.au	**E-mail**	:	paul.loewy@alsenviro.com	**No. of samples**	
Telephone	:	9525 5155	**Telephone**	:	61-3-8549 9600	**Received**	: 1
Facsimile	:	9593 8555	**Facsimile**	:	61-3-8549 9601	**Analysed**	: 1

This Interpretive Quality Control Report was issued on 25 Jun 2007 for the ALS work order reference EM0704494 and supersedes any previous reports with this reference.
This report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Type Frequency Compliance
- Summary of all Quality Control Outliers
- Brief Method Summaries

Interpretive Quality Control Report - Analysis Holding Time

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the sample aliquot was taken. Elapsed time to analysis represents time from sampling where no extraction / digestion is involved or time from extraction / digestion where this is present. For composite samples, sampling date/time is taken as that of the oldest sample contributing to that composite. Sample date/time for laboratory produced leaches are taken from the completion date/time of the leaching process. Outliers for holding time are based on USEPA SW846, APHA, AS and NEPM (1999). Failed outliers, refer to the 'Summary of Outliers'.

Matrix Type: SOIL ***Analysis Holding Time and Preservation***

Method / **Container /** Client Sample ID(s)	**Date Sampled**	**Extraction / Preparation**			**Analysis**		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
EA055-103: Moisture Content							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	----	----	----	**22 Jun 2007**	25 Jun 2007	Pass
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**25 Jun 2007**	15 Dec 2007	Pass	**25 Jun 2007**	15 Dec 2007	Pass
EG035T: Total Mercury by FIMS							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**25 Jun 2007**	16 Jul 2007	Pass	**25 Jun 2007**	16 Jul 2007	Pass
EP071: TPH - Semivolatile Fraction							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**21 Jun 2007**	2 Jul 2007	Pass	**21 Jun 2007**	31 Jul 2007	Pass
EP075(SIM): PAH/Phenols (SIM)							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**21 Jun 2007**	2 Jul 2007	Pass	**21 Jun 2007**	31 Jul 2007	Pass
EP080: TPH Volatiles/BTEX							
Soil Glass Jar - Unpreserved IF/QS-3A	**18 Jun 2007**	**22 Jun 2007**	2 Jul 2007	Pass	**22 Jun 2007**	2 Jul 2007	Pass

Interpretive Quality Control Report - Frequency of Quality Control Samples

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which this work order was processed. Actual rate should be greater than or equal to the expected rate.

Matrix Type: SOIL ***Frequency of Quality Control Samples***

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
EA055-103: Moisture Content	2	20	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG005T: Total Metals by ICP-AES	2	20	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	2	18	**11.1**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	10	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	10	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	1	**100.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Laboratory Control Samples (LCS)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	18	**5.6**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	1	**100.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Method Blanks (MB)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	18	**5.6**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	1	**100.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Matrix Spikes (MS)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	18	**5.6**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	10	**10.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement

Interpretive Quality Control Report - Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged on the 'Quality Control Report'. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot.

Non-surrogates

ALS QC Lot	Matrix Type	Laboratory Sample ID	Client Sample ID	Analyte	Data	Limits	Comment
Matrix Spikes (MS)							
EG005T: Total Metals by ICP-AES	SOIL	EM0704438-011	Anonymous	Molybdenum	63.8 %	70-130 %	Recovery less than lower data quality objective
				Zinc	ND	----	MS recovery not determined, background level greater than or equal to 4x spike level.

- **For all matrices, no RPD recovery outliers occur for the duplicate analysis.**
- **For all matrices, no method blank result outliers occur.**
- **For all matrices, no laboratory spike recoveries breaches occur.**

Surrogates

- **For all matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time

The following report highlights outliers within this 'Interpretive Quality Control Report - Analysis Holding Time'.

- **No holding time outliers occur.**

Outliers : Frequency of Quality Control Samples

The following report highlights outliers within this 'Interpretive Quality Control Report - Frequency of Quality Control Samples'.

- **No frequency outliers occur.**

Method Reference Summary

The analytical procedures used by ALS Environmental are based on established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house procedure are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

Matrix Type: SOIL ***Method Reference Summary***

Preparation Methods

EN69 : Hot Block Digest for metals in soils sediments and sludges - USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)

ORG16 : Methanolic Extraction of Soils for Purge and Trap - (USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

ORG17B : Tumbler Extraction of Solids (Option B - Non-concentrating) - In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.

Analytical Methods

EA055-103 : Moisture Content - A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)

EG005T : Total Metals by ICP-AES - (APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)

EG035T : Total Mercury by FIMS - AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)

EP071 : TPH - Semivolatile Fraction - (USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)

EP075(SIM) : PAH/Phenols (SIM) - (USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)

EP080 : TPH Volatiles/BTEX - (USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)

MS 247.

LAB	ALS	Page 1 of	
ADDRESS	4 Westal Rd, Springvale		
LAB CONTACT	Paul Lowie		
PHONE	8549 9600		

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Lvl 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
_____@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT #	PROJECT NAME
3106004	Werribee Area 4

COLLECTORS NAME	LAB JOB #
Tom Santwyk-Anderson tsantwyk-anderson@otek.com.au	

PRELIM. RESULTS BY: 25/6/07 — ☐ VERBAL ☑ FAX ☑ EMAIL

FINAL REPORT BY: 25/8/07

LAB QUOTE REF: ME/022b/06 — OTEK PO No.: 30947

REMARKS

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	TPH (C_6-C_{36})/BTEX	TPH (C_6-C_{36})/BTEX/Pb	TPH (C_6-C_{36})	HOLD	BTEX (Purge & Trap)	Lead	PAH	Benzo(a)pyrene to 0.01µg/l	Total Phenols	EPA Screen	Phenols (Speciated)	Metals (As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn)	Phosphates & Nitrates	OCs/OPs	Asbestos	Ecoli	pH
IF/QS-3A	-	1		X			X					1			X				X					X				
This Page			1	0	0	1	0	0	0			1	0	0	1	0	0	0	1	0	0	0	0	1	0	0	1	1	0

Environmental Division
Melbourne
Work Order
EM0704494

Telephone : 61-3-8549 9600

Relinquished by:	Date 18.6.07	Time 19:00	Received by: Paul Woodward	Date 18/6/07	Time PM	Custody Seals Intact?	Yes / No (NA)
Relinquished by: Paul Woodward	Date 19/6/07	Time A.M.	Received by:	Date 19/6/07	Time 8am	Samples Received Chilled?	(Yes) / No

Additional Comments:

PLEASE FORWARD TO ALS.

Level 1
222 St Kilda Rd
St Kilda VIC 3182

Tel (03) 9525 5155
Fax (03) 9593 8555

ABN 32 054 371 596

12 September 2008

Dr Fouad Abo
Environmental Auditor
Level 8, 180 Lonsdale Street
Melbourne VIC 3000

Riverwalk – Imported Fill Material Stockpile Sample Results (12/09/08)

Werribee, Victoria

Dear Fouad/ Julie,

Please find attached the results for validation samples obtained from the imported fill material sourced from the Cemex Werribee Quarry (formerly known as the Readymix Werribee Quarry) located at Wests Road, Werribee (Lot 2 TP855710). A total of 32 validation samples were obtained from approximately 800 m^3 (rate of approx. 1:25 m^3) of which 16 were requested for analysis (rate of approx. 1:50 m^3), from soil that was excavated overburden clay from within the quarry. It is proposed that this material be used to backfill excavated pipe trenches in Area 4 at the Riverwalk site.

In 2007, approximately 2,000 m^3 of soil from the Werribee quarry was sourced, validated, approved for use by the Auditor and imported to the Riverwalk Area 4 Site for back filling 4 excavations. 40 validation samples (IF-1 to IF-40) were obtained from this soil on the 23/05/07 and on the 18/06/07.

A Preliminary Site Investigation (PSI) of the Werribee Quarry (Source of imported fill) was completed in 2008 (OTEK, 2008) and should be read in conjunction with this assessment.

Quality Assurance/Quality Control (QA/QC)

Primary analytical laboratory testing was performed by ALS Laboratory Group Pty Limited (ALS), which is located at Springvale, Victoria. Secondary (QC) laboratory testing was performed by Labmark Environmental Pty Limited (Labmark), of Clayton, Victoria. Labmark and ALS are certified by the National Association of Testing Authorities (NATA) for the analysis performed.

Quality Assurance (QA)

As part of the OTEK's QA program, samples to be submitted for analytical testing were collected in a new 250 mL glass jar, filled completely with no headspace and capped with a Teflon lined lid. The samples were uniquely labelled in accordance with the sample plan, placed on ice in an esky and transferred to the analytical laboratories using appropriate sample preservation procedures and chain of custody documentation. Additional soil

samples were collected in resealable plastic bags for subsequent field screening using a photo ionisation detector (PID). Refer to Table 11 for the PID results. The samples were collected in the field by OTEK personnel, placed into laboratory prepared sample receptacles and transferred to the laboratory using proper sample preservation procedures and chain-of-custody documentation.

Due to the use of new disposable gloves for sampling, decontamination of equipment was not required.

A labelling system identifies the origin of each soil sample collected, e.g. IF-1. The label 'IF' refers to the material being imported fill and number '1' refers to the sample number Samples labelled IF/QS-# are duplicate samples analysed by the primary laboratory in order to determine the precision of the laboratory analyses and samples labelled IF/QS-#A are triplicate samples analysed by a second laboratory in order to determine the accuracy of the laboratory analyses. IF/TB-#' refers to trip blank samples which are analysed to determine the potential for cross contamination to have occurred during sampling and sample storage and transport. Samples were systematically obtained in a grid pattern from depths ranging from 10 to 15 cm below the surface of the stockpiled material.

Quality Control (QC)

Quality Control sampling and analysis was conducted as part of OTEK's QA/QC program in order to validate the integrity of field procedures and assess the accuracy and precision of laboratory analyses. During the sampling program, a total of 32 primary soil samples were collected of which, 16 were analysed. In addition, one duplicate (blind replicate sample), one triplicate (split sample) sample and one trip blank sample (QC) were collected and analysed as part of the Quality Control program. NEPM (1999) requires that QC samples be analysed at a rate of one in 10 which this sampling program exceeded.

The analytical program for the validation of the imported fill material was discussed with the Environmental Auditor and the analytical program listed below was agreed to via email on the 8th May 2007.

Field Observations:

The fill material was sourced from 'clay pits' (large pits of clay surrounded by rock) and then stockpiled 300 to 500 metres to the west of the 'clay pits' on the North Western side of the quarry.

The stockpiled material consisted of clayey silt with some 200mm basalt cobbles. The soil properties were consistant and homogenous throughout the stockpiled material. Refer to the attached Imported Fill - Photographic Log for a view of the stockpiled material.

The analytical program is summarised as follows:

- One sample per 50 m^3;
- One in 10 samples analysed for Full VIC EPA suite;
- All other samples analysed for metals, total petroleum hydrocarbons (TPH c_6-c_{36}), Organochlorine Pesticides (OCP), phenols, Polyaromatic Hydrocarbons (PAH); and
- One blind and one split sample per 20 samples obtained.

Due to human error, samples were incorrectly labelled IF-1 to IF-32, which correspond to imported fill samples collected in 2007. The laboratory (ALS) was later instructed to relabel the samples IF-41 to IF-72.

It was also realised after laboratory results had been received by OTEK that only one sample had been requested for full Vic EPA Screen analysis, where the analytical program stated above requires two. However, based on a review of the results of our previous imported fill report (OTEK, 2008a) from the same facility (which included Vic EPA Screen analysis of two samples) and this current data, OTEK have a high level of confidence that the analytical data is a true representation of the fill and that the fill is suitable for the proposed site use. Therefore, OTEK considers this one admission of analysis is not significant to the outcome to this report.

Analytical Results Summary – Stockpiled Imported Fill Material

Before soil is to be imported to site, it was temporarily stockpiled at the Cemex Werribee Quarry. 32 validation samples were obtained from one stockpile containing approximately 800 m^3 of clay overburden material. Of the 32 validation samples, 16 were placed on hold by OTEK and 16 were requested for analysis. The analytical results indicated:

- Concentrations of heavy metals in the individual samples were below NEPM HILs 'A' for all metals (refer Table 2);
- The barium concentration in 6 of 16 individual samples exceeded the NEPM EIL of 300 mg/kg, with a maximum concentration of 670 mg/kg measured in both samples IF-51 and IF-71 (Table 2). The standard deviation of the barium concentrations in the stockpiled material was 171 with a mean concentration of 314 mg/kg and a calculated 95% UCL of 392 mg/kg (Table 1). Although the barium concentration recorded in sample IF-51 and IF-71 exceeds the respective EIL by 223%, both the mean concentration and 95% UCL of barium in the material exceed the NEPM which suggests that the elevated vanadium concentrations are natural background levels. The concentrations are also within the NEPM background range for Australian soils of 100 to 3,000 mg/kg. The PSI completed for the Cemex Werribee quarry did not identify any potential on or offsite sources of barium. The PSI also identified that the site is located in the Tertiary Aged Newer Volcanics formation in which barium is commonly encountered. Therefore, OTEK considers these concentrations likely to be representative of background concentrations and are acceptable for the intended land use;
- The nickel concentration in 1 of 16 individual samples exceeded the NEPM EIL of 60 mg/kg, with a maximum concentration of 62 mg/kg measured in sample IF-65 (Table 2). The standard deviation of the nickel concentrations in the stockpiled material was 11 with a calculated 95% UCL of 40 mg/kg (Table 1). The nickel concentration recorded in sample IF-65 exceeds the respective EIL by 1% and is within the NEPM background range for Australian soils of 5 to 500 mg/kg. The PSI completed for the Cemex Werribee quarry did not identify any potential on or offsite sources of nickel. The PSI also identified that the site is located in the Tertiary Aged Newer Volcanics

formation in which nickel is commonly encountered at concentrations ranging from 131 to 388 mg/kg;

- The vanadium concentration in 2 of 16 individual samples exceeded the NEPM EIL of 50 mg/kg, with a maximum concentration of 72 mg/kg measured in both sample IF-59 and IF-63 (Table 2). The standard deviation of the vanadium concentrations in the stockpiled material was 11 with a mean concentration of 46 mg/kg and a calculated 95% UCL of 51 mg/kg (Table 1). Although the vanadium concentration recorded in sample IF-59 and IF-63 exceeds the respective EIL by 14%, both the mean concentration and 95% UCL of vanadium in the material exceed the NEPM EIL which suggests that the elevated vanadium concentrations are natural background levels. These vanadium concentrations are consistent with many basaltic clays located in the Newer Volcanic basalt regions west of Melbourne. The concentrations are also within the NEPM background range for Australian soils of 20 to 500 mg/kg. The PSI completed for the Readymix (now Cemex) Werribee quarry did not identify any potential on or offsite sources of vanadium. The PSI also identified that the site is located in the Tertiary Aged Newer Volcanics formation in which vanadium is commonly encountered.

A summary of this data (the EIL exceedences) follows on Table 1. Tables 2 through 9 summarise all of the data.

Table 1 – Stockpile Exceedence of EIL 95% UCLs

Metal	Maximum Concentration (mg/kg)	Median Concentration (mg/kg)	Minimum Concentration (mg/kg)	Number of Samples	Mean Concentration (mg/kg)	Standard Deviation	95% UCL[1] (mg/kg)	NEPM EIL (mg/kg)	NEPM Background Range (mg/kg)
Barium	670	270	120	15	314	171	392	300	100 - 3,000
Nickel	62	34	20	16	35	11	40	60	5 - 500
Vanadium	72	43	39	15	46	11	51	50	20 - 500

Note: [1] UCL = Upper Confidence Limit.
Shading indicates an exceedence of the EIL

- All other potential contaminants of concern measured are below the relevant criteria; and
- All 40 pH values recorded are slightly alkaline (range between 9.2 and 9.8), which is consistent with pH levels recorded in the natural basaltic clays associated with the Newer Volcanics in the region west of Melbourne (Table 2).

Analytical Results Summary – QA/QC Samples

The results of blind duplicate sampling indicated good agreement between the 1 primary and duplicate samples analysed (refer to Table 7). Of the 19 RPD values calculated, 18 (or 94.7%) were reported to be within the ±50% acceptance range set by Australian Standard AS4482.1. However, where both samples in the duplicate pair reported analyte concentrations below the laboratory PQLs a qualitative assessment was made and the results considered acceptable for the purpose of the investigation.

OTEK considers that the small number of sample discrepancies may be attributable to low analyte concentrations reported near the limits of detection and sample heterogeneity. We note that the discrepancies between the recorded metal concentrations show that the duplicate sample concentrations are mainly less than those recorded in the primary samples.

Analytical Results Summary – Blank Samples

The analysis of the one trip blank (IF/TB-3) obtained for the soil sampling program reported concentrations of metals below laboratory PQLs.

Analytical Results Summary – Laboratory QA/QC

Based on our evaluation of the QA/QC program, OTEK are of the opinion that the quality of the data is suitably reliant to conclude the results accurately reflecting the overall nature of the material.

Use of Material

The marginal exceedence of EILs of barium, nickel and vanadium concentrations appear to be background concentrations and all fall within the NEPM background range, OTEK considers that the stockpiled material is suitable for use as fill for backfilling pipe trenches in area 4.

If you have any questions please contact either of the undersigned on (03) 9525 5155.

Regards,

Christian Beasley
Project Manager

Tom Santwyk-Anderson
Environmental Project Manager

Attachments:

Soil Analytical Summary Tables (11 pages)

Imported Fill - Photograph Log (2 Pages)

Imported Fill – Analytical Reports (58 Pages)

References

ANZECC/NHMRC (1992) Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites. Australian and New Zealand Environment and Conservation Council & National Health and Medical Research Council, January 1992.

Environment Protection Act (1970) Act No. 8056/1970 Version 145 (23 May 2005).

Geological Survey of Victoria (GSV), Groundwater Resources Victoria; Hydrogeological map, 1982.

Geological Survey of Victoria "Melbourne" (GSV), Geological Map; 1967.

Johnson, R.W (1989); Intraplate Volcanism in South East Australia and New Zealand, Cambridge University Press

National Environmental Protection Council (1999) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM), Guideline on Investigation Levels for Soil and Groundwater, Schedule B(1), NEPC, December 1999.

OTEK Australia Pty Ltd (OTEK 2008), Readymix Quarry Preliminary Site Assessment, Werribee, Victoria, November 2003.

OTEK Australia Pty Ltd (OTEK, 2008a), Riverwalk – Imported Fill Material Stockpile Sample Results Werribee, Victoria, 27th March 2008.

TABLE 2
SOIL ANALYTICAL SUMMARY
METALS
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

		pH (1:5)	EG005T Total Metals by ICP-AES																EG048
		pH	Arsenic	Barium	Beryllium	Cadmium	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Silver	Tin	Vanadium	Zinc	Chromium (hexavalent)
		pH_Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.1	5	10	1	1	2	2	5	5	5	2	2	5	2	5	5	5	0.5
NSW EPA Guidelines for Assessing Service Stations		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	300	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEPM Background Ranges		N/A	1 - 50	100 - 3000	N/A	1	N/A	1 - 40	2 - 100	2 - 200	850	N/A	5 - 500	N/A	N/A	N/A	20 - 500	10 - 300	N/A
NEPM 1999 EIL		N/A	20	300	N/A	3	N/A	N/A	100	600	500	N/A	60	N/A	N/A	N/A	50	200	1
NEPM 1999 HIL A		**N/A**	**100**	**N/A**	**20**	**20**	**N/A**	**100**	**1000**	**300**	**1500**	**N/A**	**600**	**N/A**	**N/A**	**N/A**	**N/A**	**7000**	**100**
Field ID	**Sampled Date**																		
IF-41	1/08/2008	-	<5	-	-	<1	-	-	7	8	-	<2	20	<5	<2	<5	-	9	<0.5
IF-43	1/08/2008	9.2	<5	430	<1	<1	36	14	9	8	329	-	28	-	-	-	44	11	-
IF-45	1/08/2008	9.6	<5	270	<1	<1	35	14	10	8	287	-	30	-	-	-	41	11	-
IF-47	1/08/2008	9.5	<5	350	<1	<1	36	19	10	8	499	-	38	-	-	-	45	12	-
IF-49	1/08/2008	9.5	<5	260	<1	<1	33	20	9	8	360	-	30	-	-	-	44	11	-
IF-51	1/08/2008	9.7	<5	670	<1	<1	32	12	7	8	257	-	24	-	-	-	41	9	-
IF-53	1/08/2008	9.5	<5	150	<1	<1	36	20	12	8	462	-	47	-	-	-	39	17	-
IF-55	1/08/2008	9.6	<5	250	1	<1	36	15	9	9	275	-	27	-	-	-	40	10	-
IF-57	1/08/2008	9.8	<5	290	<1	<1	34	15	10	8	358	-	36	-	-	-	43	14	-
IF-59	1/08/2008	9.6	<5	410	1	<1	48	20	15	10	498	-	46	-	-	-	72	13	-
IF-61	1/08/2008	9.7	<5	170	1	<1	35	14	9	9	236	-	22	-	-	-	47	10	-
IF-63	1/08/2008	9.5	<5	320	1	<1	41	16	12	11	392	-	35	-	-	-	72	12	-
IF-65	1/08/2008	9.5	<5	120	<1	<1	42	22	16	7	492	-	62	-	-	-	45	24	-
IF-67	1/08/2008	9.6	<5	190	1	<1	39	18	12	8	422	-	46	-	-	-	40	15	-
IF-69	1/08/2008	9.4	<5	160	<1	<1	36	15	10	9	325	-	33	-	-	-	40	12	-
IF-71	1/08/2008	9.3	<5	670	<1	<1	34	16	8	9	332	-	34	-	-	-	39	10	-

Notes:

- Sample ID: B-#/#.# denotes a discrete soil sample obtained from a soil boring at a depth of #.#m, HA-#/#.# denotes a discrete soil sample obtained from a hand auger at a depth of #.#m, S-# denotes a discrete soil sample obtained from an excavation at a specified depth, IF-# denotes a discrete sample obtained from imported fill and A-#/V-# denotes a discrete representative sample obtained from a stockpile of soil.
- < # indicates analyte not detected above laboratory Limit of Reporting.
- "-" = sample analysis not requested.
- N/A = criteria not specified.
- mg/kg indicates milligrams of analyte per kilogram of soil.
- NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
- NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.
- Shading indicates concentration exceeds NEPM EIL.

TABLE 3
SOIL ANALYTICAL SUMMARY
PAH PHENOLS
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

		Moisture	EP075(SIM)A: Phenolic Compounds												EP075(SIM)B: Polynuclear Aromatic Hydrocarbons																			
		Moisture	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,6-dichlorophenol	2-chlorophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4-chloro-3-methylphenol	Phenol	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Pentachlorophenol	Phenanthrene	Pyrene		
		%	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		
EQL		1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5		
		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
NEPM 1999 EIL		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
NEPM 1999 HIL A		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**8500**	**N/A**	**N/A**	**N/A**	**N/A**	**1**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**		
Field ID	**Sampled Date**																															
IF-41	1/08/2008	21.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
IF-43	1/08/2008	9.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-45	1/08/2008	16.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-47	1/08/2008	11.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-49	1/08/2008	11.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-51	1/08/2008	31.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-53	1/08/2008	13.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-55	1/08/2008	19.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-57	1/08/2008	37.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-59	1/08/2008	46	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-61	1/08/2008	31.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-63	1/08/2008	29.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-65	1/08/2008	10.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-67	1/08/2008	24	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-69	1/08/2008	10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		
IF-71	1/08/2008	10.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5		

Notes:

- Sample ID: B-#/#.# denotes a discrete soil sample obtained from a soil boring at a depth of #.#m, HA-#/#.# denotes a discrete soil sample obtained from a hand auger at a depth of #.#m, S-# denotes a discrete soil sample obtained from an excavation at a specified depth, IF-# denotes a discrete sample obtained from imported fill and A-#/V-# denotes a discrete representative sample obtained from a stockpile of soil.
- < # indicates analyte not detected above laboratory Limit of Reporting.
- "-" = sample analysis not requested.
- N/A = criteria not specified.
- mg/kg indicates milligrams of analyte per kilogram of soil.
- NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
- NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

TABLE 4
SOIL ANALYTICAL SUMMARY
PESTICIDES
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

		EP068A: Organochlorine Pesticides (OC)																				
		4,4-DDE	a-BHC	Aldrin	b-BHC	cis-Chlordane	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	trans-chlordane
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05
NEPM 1999 EIL		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEPM 1999 HIL A		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**10**	**N/A**	**N/A**	**N/A**	**N/A**
Field ID	**Sampled Date**																					
IF-41	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-43	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-45	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-47	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-49	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-51	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-53	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-55	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-57	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-59	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-61	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-63	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-65	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-67	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-69	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
IF-71	1/08/2008	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05

Notes:

- Sample ID: B-#/#.# denotes a discrete soil sample obtained from a soil boring at a depth of #.#m, HA-#/#.# denotes a discrete soil sample obtained from a hand auger at a depth of #.#m, S-# denotes a discrete soil sample obtained from an excavation at a specified depth, IF-# denotes a discrete sample obtained from imported fill and A-#/V-# denotes a discrete representative sample obtained from a stockpile of soil.
- < # indicates analyte not detected above laboratory Limit of Reporting.
- "-" = sample analysis not requested.
- N/A = criteria not specified.
- mg/kg indicates milligrams of analyte per kilogram of soil.
- NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
- NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

TABLE 5
SOIL ANALYTICAL SUMMARY
SEMIVOLITILE ORGANIC COMPOUNDS
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

		EP075A: Phenolic Compounds (Halogenated)									EP075A: Phenolic Compounds (Non-halogenated)											
		2,3,5,6-Tetrachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,6-dichlorophenol	2,3,4,5 & 2,3,4,6-Tetrachlorophenol	2-chlorophenol	2-methylphenol	2-nitrophenol	3-&4-methylphenol	4,4-DDE	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-chloro-3-methylphenol	4-nitrophenol	a-BHC	Acenaphthene	Acenaphthylene	Aldrin
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.03	0.05	0.05	0.03	1	5	0.03	0.05	0.03	1	1	1	0.05	5	5	0.03	5	0.03	0.5	0.5	0.03
NEPM 1999 EIL		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEPM 1999 HIL A		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Field ID	**Sampled Date**																					
IF-41	1/08/2008	<0.03	<0.05	<0.05	<0.03	<1	<5	<0.03	<0.05	<0.03	<1	<1	<1	<0.05	<5	<5	<0.03	<5	<0.03	<0.5	<0.5	<0.03
IF-43	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-45	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-47	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-49	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-51	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-53	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-55	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-57	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-59	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-61	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-63	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-65	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-67	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-69	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-71	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

- Sample ID: B-#/#.# denotes a discrete soil sample obtained from a soil boring at a depth of #.#m, HA-#/#.# denotes a discrete soil sample obtained from a hand auger at a depth of #.#m, S-# denotes a discrete soil sample obtained from an excavation at a specified depth, IF-# denotes a discrete sample obtained from imported fill and A-#/V-# denotes a discrete representative sample obtained from a stockpile of soil.
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- NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
- NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

TABLE 5
SOIL ANALYTICAL SUMMARY
SEMIVOLITILE ORGANIC COMPOUNDS
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

		EP075B: Polynuclear Aromatic Hydrocarbons								EP075													
		Anthracene	b-BHC	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	cis-Chlordane	d-BHC	DDD	DDT	Dibenz(a,h)anthracene	Dieldrin	Dinoseb	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Fluoranthene	Fluorene
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.5	0.03	0.5	0.5	0.5	0.5	0.5	0.03	0.03	0.05	0.05	0.5	0.03	5	0.03	0.03	0.03	0.03	0.03	0.5	0.5
NEPM 1999 EIL		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEPM 1999 HIL A		**N/A**	**N/A**	**N/A**	**1**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Field ID	**Sampled Date**																						
IF-41	1/08/2008	<0.5	<0.03	<0.5	<0.5	<0.5	<0.5	<0.5	<0.03	<0.03	<0.05	<0.05	<0.5	<0.03	<5	<0.03	<0.03	<0.03	<0.03	<0.03	<0.5	<0.5
IF-43	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-45	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-47	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-49	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-51	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-53	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-55	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-57	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-59	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-61	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-63	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-65	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-67	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-69	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-71	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 5
SOIL ANALYTICAL SUMMARY
SEMIVOLITILE ORGANIC COMPOUNDS
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

		: Organochlorine Pesticides														
		g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Indeno(1,2,3-c,d)pyrene	Methoxychlor	Naphthalene	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	trans-chlordane	Aldrin + Dieldrin	chlordane	DDT+DDE+DDD
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.03	0.03	0.03	0.03	0.5	0.03	0.5	0.2	0.5	1	0.5	0.03	0.03	0.03	0.05
NEPM 1999 EIL		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEPM 1999 HIL A		**N/A**	**10**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**8500**	**N/A**	**N/A**	**10**	**50**	**200**
Field ID	**Sampled Date**															
IF-41	1/08/2008	<0.03	<0.03	<0.03	<0.03	<0.5	<0.03	<0.5	<0.2	<0.5	<1	<0.5	<0.03	<0.03	<0.03	<0.05
IF-43	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-45	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-47	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-49	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-51	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-53	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-55	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-57	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-59	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-61	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-63	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-65	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-67	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-69	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-71	1/08/2008	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE 6
SOIL ANALYTICAL SUMMARY
CYANIDE FLOURIDE
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

		EK026G	EK040T
		Cyanide Total	Fluoride
		mg/kg	mg/kg
EQL		1	40
NEPM 1999 EIL		N/A	N/A
NEPM 1999 HIL A		**500**	**N/A**
Field ID	**Sampled Date**		
IF-41	1/08/2008	<1	120
IF-43	1/08/2008	-	-
IF-45	1/08/2008	-	-
IF-47	1/08/2008	-	-
IF-49	1/08/2008	-	-
IF-51	1/08/2008	-	-
IF-53	1/08/2008	-	-
IF-55	1/08/2008	-	-
IF-57	1/08/2008	-	-
IF-59	1/08/2008	-	-
IF-61	1/08/2008	-	-
IF-63	1/08/2008	-	-
IF-65	1/08/2008	-	-
IF-67	1/08/2008	-	-
IF-69	1/08/2008	-	-
IF-71	1/08/2008	-	-

Notes:

hand auger at a depth of #.#m, S-# denotes a discrete soil sample obtained from an excavation at a specified depth, IF-# denotes a discrete sample obtained from imported fill and A-#/V-# denotes a discrete representative sample obtained from a stockpile of soil.

- < # indicates analyte not detected above laboratory Limit of Reporting.
- "-" = sample analysis not requested.
- N/A = criteria not specified.
- mg/kg indicates milligrams of analyte per kilogram of soil.
- NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 19

December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

TABLE 7
SOIL ANALYTICAL SUMMARY
TPH BTEX
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

		EP080/071: Total Petroleum Hydrocarbons					EP074A: Monocyclic Aromatic Hydrocarbons					EP074I: Volatile Halogenated Compounds																							
		TPH C10 - C14 Fraction	TPH C15 - C28 Fraction	TPH C29-C36 Fraction	TPH+C10 - C36 (Sum of total)	TPH C 6 - C 9 Fraction	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,2-dichloroethane	1,4-dichlorobenzene	Benzene	Carbon tetrachloride	Chlorobenzene	Chloroform	cis-1,2-dichloroethene	Dichloromethane	Hexachlorobutadiene	Styrene	TCE	Tetrachloroethene	TPH C 6 - C 9 Fraction	trans-1,2-dichloroethene	Vinyl chloride
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		50	100	100	50	10	0.2	0.5	0.5	0.5	0.5	0.01	0.01	0.02	0.04	0.01	0.01	0.02	0.02	0.02	0.2	0.01	0.02	0.02	0.01	0.4	0.02	0.5	0.02	0.02	10	0.02	0.02
NSW EPA Guidelines for Assessing Service Stations		N/A	N/A	N/A	N/A	65	1	130	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEPM 1999 EIL		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
NEPM 1999 HIL A		**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Field ID	**Sampled Date**																																	
IF-41	1/08/2008	<50	<100	<100	<50	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.02	<0.04	<0.01	<0.01	<0.02	<0.02	<0.02	<0.2	<0.01	<0.02	<0.02	<0.01	<0.4	<0.02	<0.5	<0.02	<0.02	<10	<0.02	<0.02
IF-43	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-45	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-47	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-49	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-51	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-53	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-55	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-57	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-59	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-61	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-63	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-65	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-67	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-69	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
IF-71	1/08/2008	<50	<100	<100	-	<10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

- Sample ID: B-#/#.# denotes a discrete soil sample obtained from a soil boring at a depth of #.#m, HA-#/#.# denotes a discrete soil sample obtained from a hand auger at a depth of #.#m, S-# denotes a discrete soil sample obtained from an excavation at a specified depth, IF-# denotes a discrete sample obtained from imported fill and A-#/V-# denotes a discrete representative sample obtained from a stockpile of soil.
- < # indicates analyte not detected above laboratory Limit of Reporting.
- "-" = sample analysis not requested.
- N/A = criteria not specified.
- mg/kg indicates milligrams of analyte per kilogram of soil.
- NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).
- NEPM interim urban ecological investigation levels (EILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1). EILs are based on considerations of phytotoxicity, ANZECC B levels, and soil survey data from urban residential properties in four Australian cities.

TABLE 8
SOIL ANALYTICAL SUMMARY
QAQC
IMPORTED FILL REPORT
MELBOURNE WATER, WERRIBEE, VICTORIA

			Field_ID	IF-41	IF/QS-4	RPD	IF-41	IF/QS-4A	RPD
			Sampled Date	1/08/2008	1/08/2008	%	1/08/2008	1/08/2008	%
Method_Type	**ChemName**	**Units**	**EQL**						
Moisture Content	Moisture	%	1	21.5	20.2	6	21.5		
Total Mercury by FI	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.01	0
Total Metals by ICP	Arsenic	mg/kg	5	<5.0	<5.0	0	<5.0	<2.0	0
	Cadmium	mg/kg	1	<1.0	<1.0	0	<1.0	<2.0	0
	Copper	mg/kg	5	7.0	6.0	15	7.0	8.0	13
	Lead	mg/kg	5	8.0	8.0	0	8.0	12.0	40
	Molybdenum	mg/kg	2	<2.0			<2.0	<2.0	0
	Nickel	mg/kg	2	20.0	19.0	5	20.0	19.0	5
	Selenium	mg/kg	5 (Primary): 2 (Interlab)	<5.0			<5.0	<2.0	0
	Tin	mg/kg	5 (Primary): 2 (Interlab)	<5.0			<5.0	<2.0	0
	Zinc	mg/kg	5	9.0	8.0	12	9.0	13.0	36
TPH - Semivolatile I	TPH C10 - C14 Fraction	mg/kg	50	<50.0	<50.0	0	<50.0	13.0	**117**
	TPH C15 - C28 Fraction	mg/kg	100	<100.0	<100.0	0	<100.0	<20.0	0
	TPH C29-C36 Fraction	mg/kg	100	<100.0	<100.0	0	<100.0	<20.0	0
Volatile Organic Co	Benzene	mg/kg	0.2	<0.2			<0.2	<0.2	0
	Ethylbenzene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5			<0.5	<1.0	0
	Toluene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5			<0.5	<1.0	0
	TPH C 6 - C 9 Fraction	mg/kg	10 (Primary): 5 (Interlab)	<10.0			<10.0	<5.0	0
	Xylene (m & p)	mg/kg	0.5 (Primary): 2 (Interlab)	<0.5			<0.5	<2.0	0
	Xylene (o)	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5			<0.5	<1.0	0

Notes

*RPDs have only been considered where a concentration is greater than 5 times the EQL.

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

IF-#' denotes a discrete sample obtained from imported fill and A-#/V-# denotes a discrete representative sample obtained from a stockpile of soil.

- < # indicates analyte not detected above laboratory Limit of Reporting.
- "-" = sample analysis not requested.
- N/A = criteria not specified.
- mg/kg indicates milligrams of analyte per kilogram of soil.

TABLE 9
SOIL ANALYTICAL SUMMARY
BLANKS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

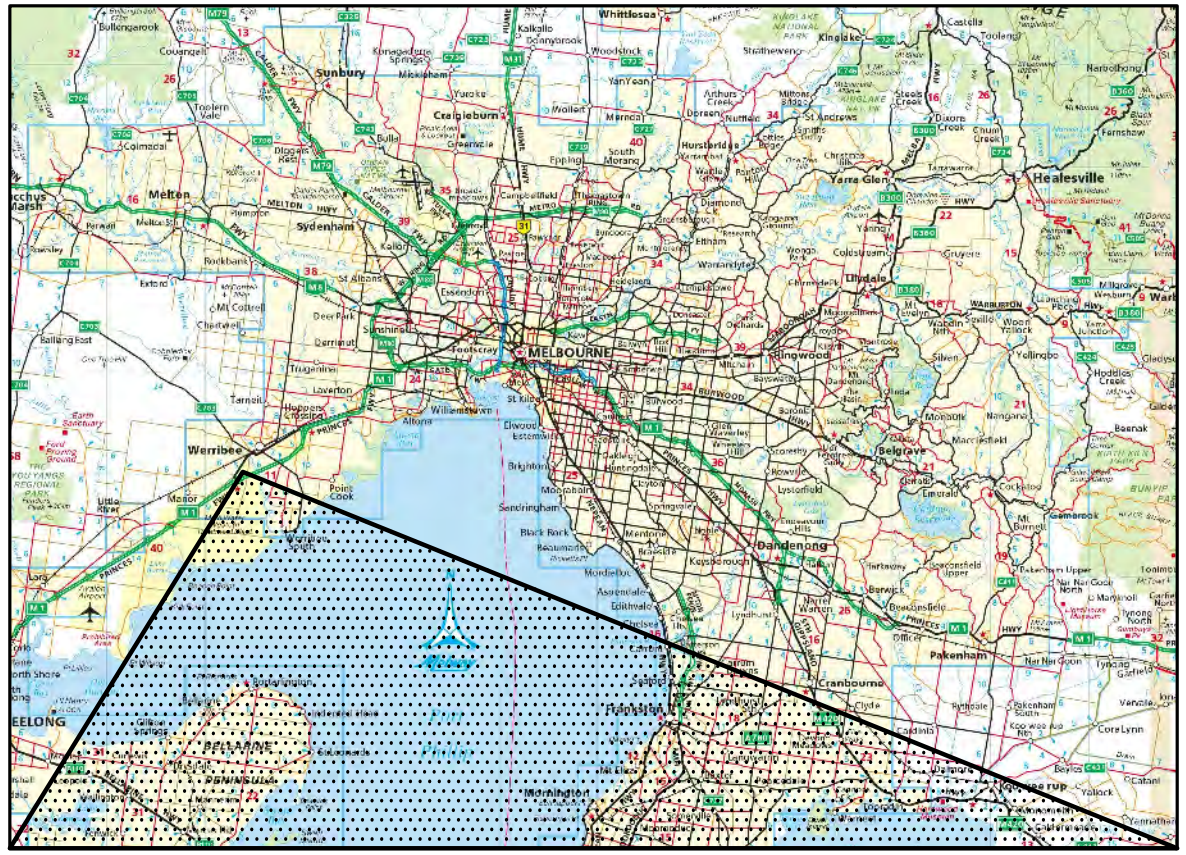
		Field_ID	IF/TB-3
		Sampled_Date-T	1/08/2008
		Sample_Type	Trip_B
ChemName	**Units**	**EQL**	
Mercury	mg/l	0.0001	<0.0001
Arsenic	mg/l	0.001	<0.001
Barium	mg/l	0.001	<0.001
Beryllium	mg/l	0.001	<0.001
Cadmium	mg/l	0.0001	<0.0001
Chromium (III+VI)	mg/l	0.001	<0.001
Cobalt	mg/l	0.001	<0.001
Copper	mg/l	0.001	<0.001
Lead	mg/l	0.001	<0.001
Manganese	mg/l	0.001	<0.001
Nickel	mg/l	0.001	<0.001
Vanadium	mg/l	0.01	<0.01
Zinc	mg/l	0.005	<0.005

Note:

- < # indicates analyte not detected above laboratory Limit of Reporting.
- "-" = sample analysis not requested.
- N/A = criteria not specified.
- mg/kg indicates milligrams of analyte per kilogram of soil.
    - NEPM health-based investigation levels (HILs) obtained from National Environmental Protection (Assessment of Site Contamination) Measure, December 1999, Schedule B(1).

TABLE10
SOIL ANALYTICAL SUMMARY
PID READINGS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	PID Reading (ppm)
IF-41	01-Aug-08	0.2
IF-42	01-Aug-08	0.8
IF-43	01-Aug-08	0.6
IF-44	01-Aug-08	0.4
IF-45	01-Aug-08	0.2
IF-46	01-Aug-08	0.7
IF-47	01-Aug-08	0.9
IF-48	01-Aug-08	0.8
IF-49	01-Aug-08	0.6
IF-50	01-Aug-08	0.4
IF-51	01-Aug-08	0.7
IF-52	01-Aug-08	0.4
IF-53	01-Aug-08	0.4
IF-54	01-Aug-08	0.7
IF-55	01-Aug-08	0.8
IF-56	01-Aug-08	0.2
IF-57	01-Aug-08	0.8
IF-58	01-Aug-08	0.6
IF-59	01-Aug-08	0.2
IF-60	01-Aug-08	0.4
IF-61	01-Aug-08	0.6
IF-62	01-Aug-08	0.9
IF-63	01-Aug-08	0.7
IF-64	01-Aug-08	0.9
IF-65	01-Aug-08	0.8
IF-66	01-Aug-08	0.7
IF-67	01-Aug-08	0.4
IF-68	01-Aug-08	0.7
IF-69	01-Aug-08	0.3
IF-70	01-Aug-08	0.5
IF-71	01-Aug-08	0.6
IF-72	01-Aug-08	0.7



REGIONAL MAP

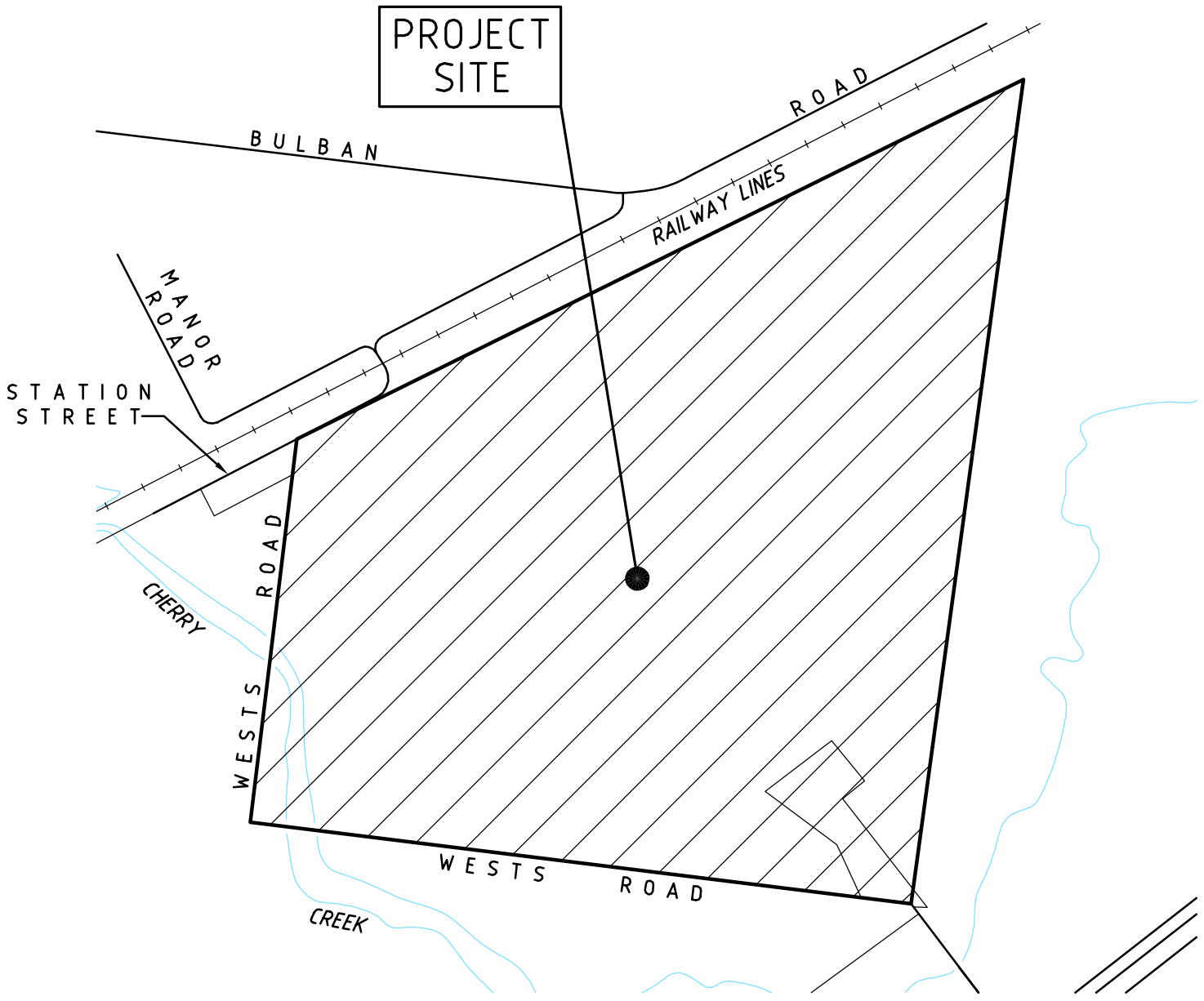
NOT TO SCALE

LOCALITY MAP

METRES

0 100 200 300 400 500 1000

APPROXIMATE SCALE ONLY



VICINITY MAP

METRES

0 50 100 200 500

APPROXIMATE SCALE 1:15000

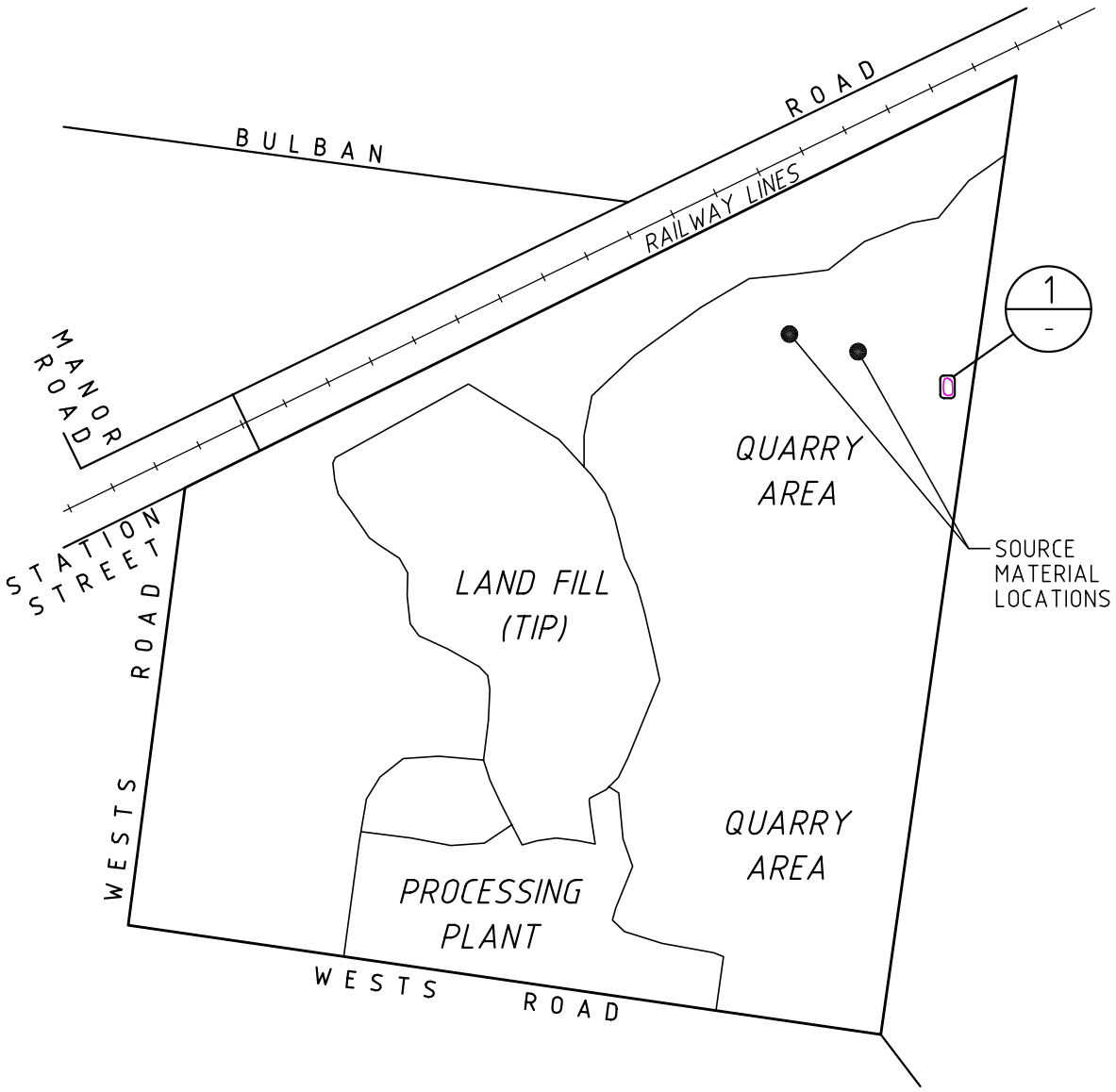
ISSUE	DATE	AMENDMENTS	DRN	CKD
01	07.03.08	ORIGINAL ISSUE	REM	LCC

OTEK AUSTRALIA PTY LTD
ABN 32 054 371 596

MELBOURNE TEL (03) 9525 5155 FAX (03) 9593 8555
BRISBANE TEL (07) 3426 5200 FAX (07) 3426 5299
SYDNEY TEL (02) 9417 4499 FAX (02) 9417 2314
PERTH TEL (08) 9227 9000 FAX (08) 9227 9009
www.otek.com.au

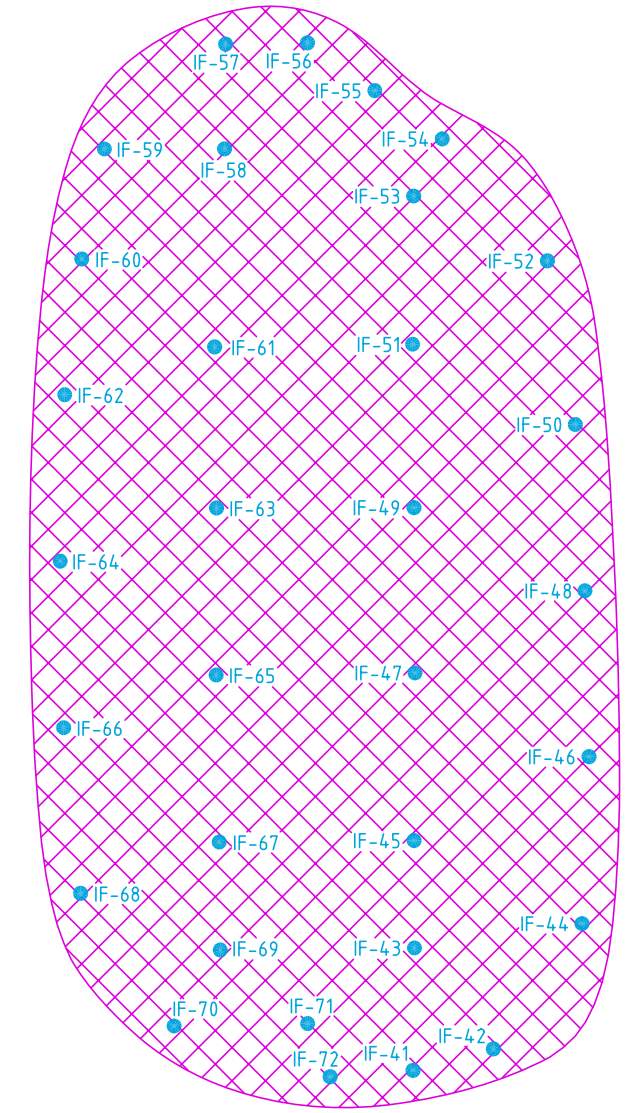
REGIONAL & VICINITY MAPS
IMPORTED FILL MATERIAL STOCKPILE SAMPLE RESULTS
MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE	DRAWN: REM	DATE: 07.03.08	CHECKED	APPROVED	FIG No:
A3	REV: 01	DWG NAME: 3106004WQF01			FIGURE 1



SITE LAYOUT

METRES
0 50 100 200 500
APPROXIMATE SCALE 1:15000



DETAIL 1 -

STOCKPILE 1
(800m³)

METRES
0 1 2 3 4 5 10
APPROXIMATE SCALE 1:250

LEGEND

IF-# ● STOCKPILE SOIL SAMPLE

STOCKPILE AREA

ISSUE	DATE	AMENDMENTS	DRN	CKD
01	07.03.08	ORIGINAL ISSUE	REM	LCC

OTEK AUSTRALIA PTY LTD
ABN 32 054 371 596

MELBOURNE
TEL (03) 9525 5155
FAX (03) 9593 8555

BRISBANE
TEL (07) 3426 5200
FAX (07) 3426 5299

SYDNEY
TEL (02) 9417 4499
FAX (02) 9417 2314

PERTH
TEL (08) 9227 9000
FAX (08) 9227 9009

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STOCKPILE & SAMPLE LOCATIONS

IMPORTED FILL MATERIAL STOCKPILE SAMPLE RESULTS

MELBOURNE WATER, WERRIBEE, VICTORIA

SHEET SIZE	DRAWN	DATE	CHECKED	APPROVED	FIG No:
A3	REM	07.03.08			FIGURE 2
	REV: 01	DWG NAME: 3106004WQF02			

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0806340**	Page	: 1 of 20
Amendment	: **2**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
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Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4 - ASBESTOS PIPE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 38360		
C-O-C number	: —	Date Samples Received	: 04-AUG-2008
Sampler	: CB	Issue Date	: 14-AUG-2008
Site	: WERRIBEE AREA 4		
		No. of samples received	: 18
Quote number	: —	No. of samples analysed	: 18

OTEK Australia
INSPECTION VERIFICATION RECORD
PASS ✓ FAIL
NAME (Print) CHRISTIAN BEASLEY
SIGNATURE
DATE 21/08/08

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

NATA
WORLD RECOGNISED ACCREDITATION

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Kumara Dadallage	Senior Organic Chemist	Organics
Peter Donaghy	Laboratory Supervisor	Newcastle
Terrance Hettipathirana	Senior ICP/MS Chemist	Inorganics

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: **EM0806340**	Page	: 1 of 20
Amendment	: **2**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4 - ASBESTOS PIPE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: 38360		
C-O-C number	: ----	Date Samples Received	: 04-AUG-2008
Sampler	: CB	Issue Date	: 14-AUG-2008
Site	: WERRIBEE AREA 4		
		No. of samples received	: 18
Quote number	: ----	No. of samples analysed	: 18

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Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Kumara Dadallage	Senior Organic Chemist	Organics
Peter Donaghy	Laboratory Supervisor	Newcastle
Terrance Hettipathirana	Senior ICP/MS Chemist	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for processing purposes. If the sampling time is displayed as 0:00 the information was not provided by client.

Key : CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting

- **EG048 : EM0806204 #18 matrix spike failed for hexavalent chromium. This has been confirmed by re-analysis.**
- **EPO80 Poor soil surrogate recoveries due to high moisture content.**
- **This report has been amended as a result of a request to change sample identification numbers (IDs) received by ALS from Christian Beasley on 13/8. All analysis results are as per the previous report.**
- **This report has been amended as a result of misinterpretation of sample identification numbers (IDs). All analysis results are as per the previous report 14/8**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-41	IF-43	IF-45	IF-47	IF-49
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-001	EM0806340-002	EM0806340-003	EM0806340-004	EM0806340-005
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	**9.2**	**9.6**	**9.5**	**9.5**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**21.5**	**9.6**	**16.4**	**11.4**	**11.1**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	----	**430**	**270**	**350**	**260**
Beryllium	7440-41-7	1	mg/kg	----	<1	<1	<1	<1
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	**36**	**35**	**36**	**33**
Cobalt	7440-48-4	2	mg/kg	----	**14**	**14**	**19**	**20**
Copper	7440-50-8	5	mg/kg	**7**	**9**	**10**	**10**	**9**
Lead	7439-92-1	5	mg/kg	**8**	**8**	**8**	**8**	**8**
Manganese	7439-96-5	5	mg/kg	----	**329**	**287**	**499**	**360**
Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**20**	**28**	**30**	**38**	**30**
Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
Silver	7440-22-4	2	mg/kg	<2	----	----	----	----
Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
Vanadium	7440-62-2	5	mg/kg	----	**44**	**41**	**45**	**44**
Zinc	7440-66-6	5	mg/kg	**9**	**11**	**11**	**12**	**11**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	----	----	----	----
EK026G: Total Cyanide By Discrete Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	----	----	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	**120**	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-41	IF-43	IF-45	IF-47	IF-49
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-001	EM0806340-002	EM0806340-003	EM0806340-004	EM0806340-005
EP068A: Organochlorine Pesticides (OC) - Continued								
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	----	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	<0.2	<0.2	<0.2
EP074A: Monocyclic Aromatic Hydrocarbons								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of monocyclic aromatic hydrocarbons	----	0.2	mg/kg	<0.2	----	----	----	----
EP074I: Volatile Halogenated Compounds								
Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	----	----	----	----
1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	----	----	----	----
Methylene chloride	75-09-2	0.4	mg/kg	<0.4	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	----	----	----	----
Chloroform	67-66-3	0.02	mg/kg	<0.02	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	----	----	----	----
Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	----	----	----	----
1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	----	----	----	----
Trichloroethene	79-01-6	0.02	mg/kg	<0.02	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	----	----	----	----
Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-41	IF-43	IF-45	IF-47	IF-49
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-001	EM0806340-002	EM0806340-003	EM0806340-004	EM0806340-005
EP074I: Volatile Halogenated Compounds - Continued								
1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	----	----	----	----
Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	----	----	----	----
Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	----	----	----	----
^ Sum of volatile chlorinated hydrocarbons	----	0.01	mg/kg	<0.01	----	----	----	----
^ Sum of other chlorinated hydrocarbons (VIC EPA 448.3)	----	0.01	mg/kg	<0.01	----	----	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	----	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	----	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-41	IF-43	IF-45	IF-47	IF-49
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-001	EM0806340-002	EM0806340-003	EM0806340-004	EM0806340-005
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
EP075A: Phenolic Compounds (Halogenated)								
2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	----	----	----	----
4-Chloro-3-Methylphenol	59-50-7	0.03	mg/kg	<0.03	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	----	----	----	----
2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	----	----	----	----
2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	----	----	----	----
Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	----	----	----	----
^ Sum of Phenols (halogenated)	----	0.03	mg/kg	<0.03	----	----	----	----
EP075A: Phenolic Compounds (Non-halogenated)								
Phenol	108-95-2	1	mg/kg	<1	----	----	----	----
2-Methylphenol	95-48-7	1	mg/kg	<1	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	----	----	----
2-Nitrophenol	88-75-5	1	mg/kg	<1	----	----	----	----
2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	----	----	----	----
2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	----	----	----	----
4-Nitrophenol	100-02-7	5	mg/kg	<5	----	----	----	----
2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	----	----	----	----
Dinoseb	88-85-7	5	mg/kg	<5	----	----	----	----
2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	----	----	----	----
^ Sum of Phenols (non-halogenated)	----	1	mg/kg	<1	----	----	----	----
EP075B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-41	IF-43	IF-45	IF-47	IF-49
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-001	EM0806340-002	EM0806340-003	EM0806340-004	EM0806340-005
EP075B: Polynuclear Aromatic Hydrocarbons - Continued								
Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
EP075I: Organochlorine Pesticides								
alpha-BHC	319-84-6	0.03	mg/kg	<0.03	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	----	----	----	----
beta-BHC	319-85-7	0.03	mg/kg	<0.03	----	----	----	----
gamma-BHC	58-89-9	0.03	mg/kg	<0.03	----	----	----	----
delta-BHC	319-86-8	0.03	mg/kg	<0.03	----	----	----	----
Heptachlor	76-44-8	0.03	mg/kg	<0.03	----	----	----	----
Aldrin	309-00-2	0.03	mg/kg	<0.03	----	----	----	----
Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	----	----	----	----
cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	----	----	----	----
trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	----	----	----	----
Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.03	mg/kg	<0.03	----	----	----	----
Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	----	----	----	----
Endrin	72-20-8	0.03	mg/kg	<0.03	----	----	----	----
Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	----	----	----	----
4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of organochlorine pesticides	----	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg	<0.05	----	----	----	----
^ Chlordane	57-74-9	0.03	mg/kg	<0.03	----	----	----	----
^ Sum of other organochlorine pesticides	----	0.03	mg/kg	<0.03	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C6 - C9 Fraction	----	10	mg/kg	----	<10	<10	<10	<10

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-41	IF-43	IF-45	IF-47	IF-49
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-001	EM0806340-002	EM0806340-003	EM0806340-004	EM0806340-005
EP080/071: Total Petroleum Hydrocarbons - Continued								
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**88.0**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	----	**93.3**	**102**	**72.3**	**72.0**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	----	**97.0**	**109**	**72.1**	**74.4**
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**95.8**	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	**90.1**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	**94.5**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	----	**91.2**	**91.1**	**87.6**	**85.8**
2-Chlorophenol-D4	93951-73-6	0.1	%	----	**100**	**100**	**95.9**	**94.9**
2.4.6-Tribromophenol	118-79-6	0.1	%	----	**86.2**	**85.5**	**80.8**	**78.0**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	----	**95.4**	**96.1**	**89.6**	**91.5**
Anthracene-d10	1719-06-8	0.1	%	----	**98.0**	**99.6**	**98.3**	**97.6**
4-Terphenyl-d14	1718-51-0	0.1	%	----	**111**	**112**	**110**	**106**
EP075S: Acid Extractable Surrogates								
2-Fluorophenol	367-12-4	0.1	%	**61.0**	----	----	----	----
Phenol-d6	13127-88-3	0.1	%	**69.8**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	**68.3**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%	**37.4**	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates								
Nitrobenzene-D5	4165-60-0	0.1	%	**72.5**	----	----	----	----
1.2-Dichlorobenzene-D4	2199-69-1	0.1	%	**89.4**	----	----	----	----
2-Fluorobiphenyl	321-60-8	0.1	%	**77.5**	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	**81.1**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	**106**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	----	**94.6**	**95.1**	**92.3**	**93.3**
Toluene-D8	2037-26-5	0.1	%	----	**84.0**	**82.6**	**74.0**	**78.4**
4-Bromofluorobenzene	460-00-4	0.1	%	----	**86.9**	**83.7**	**76.7**	**78.6**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-51	IF-53	IF-55	IF-57	IF-59
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-006	EM0806340-007	EM0806340-008	EM0806340-009	EM0806340-010
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**9.7**	**9.5**	**9.6**	**9.8**	**9.6**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**31.2**	**13.9**	**19.3**	**37.3**	**46.0**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	**670**	**150**	**250**	**290**	**410**
Beryllium	7440-41-7	1	mg/kg	<1	<1	**1**	<1	**1**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**32**	**36**	**36**	**34**	**48**
Cobalt	7440-48-4	2	mg/kg	**12**	**20**	**15**	**15**	**20**
Copper	7440-50-8	5	mg/kg	**7**	**12**	**9**	**10**	**15**
Lead	7439-92-1	5	mg/kg	**8**	**8**	**9**	**8**	**10**
Manganese	7439-96-5	5	mg/kg	**257**	**462**	**275**	**358**	**498**
Nickel	7440-02-0	2	mg/kg	**24**	**47**	**27**	**36**	**46**
Vanadium	7440-62-2	5	mg/kg	**41**	**39**	**40**	**43**	**72**
Zinc	7440-66-6	5	mg/kg	**9**	**17**	**10**	**14**	**13**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-51	IF-53	IF-55	IF-57	IF-59
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-006	EM0806340-007	EM0806340-008	EM0806340-009	EM0806340-010
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-51	IF-53	IF-55	IF-57	IF-59
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-006	EM0806340-007	EM0806340-008	EM0806340-009	EM0806340-010
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.1	%	**50.0**	**80.2**	**87.0**	**61.4**	**61.7**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**60.2**	**84.7**	**93.4**	**63.4**	**60.7**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**87.3**	**81.1**	**85.2**	**98.7**	**89.0**
2-Chlorophenol-D4	93951-73-6	0.1	%	**96.1**	**89.5**	**93.5**	**105**	**94.8**
2.4.6-Tribromophenol	118-79-6	0.1	%	**82.2**	**76.4**	**80.9**	**90.7**	**82.4**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**91.6**	**85.2**	**90.2**	**102**	**91.0**
Anthracene-d10	1719-06-8	0.1	%	**97.2**	**90.5**	**96.7**	**101**	**93.5**
4-Terphenyl-d14	1718-51-0	0.1	%	**106**	**98.6**	**106**	**110**	**99.5**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**98.2**	**97.5**	**95.3**	**93.9**	**98.0**
Toluene-D8	2037-26-5	0.1	%	**77.0**	**77.2**	**73.7**	**63.1**	**66.4**
4-Bromofluorobenzene	460-00-4	0.1	%	**79.2**	**77.0**	**73.1**	**70.3**	**72.8**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-61	IF-63	IF-65	IF-67	IF-69
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-011	EM0806340-012	EM0806340-013	EM0806340-014	EM0806340-015
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**9.7**	**9.5**	**9.5**	**9.6**	**9.4**
EA055: Moisture Content								
^ Moisture Content (dried @ 103°C)	----	1.0	%	**31.2**	**29.1**	**10.2**	**24.0**	**10.0**
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	**170**	**320**	**120**	**190**	**160**
Beryllium	7440-41-7	1	mg/kg	**1**	**1**	<1	**1**	<1
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**35**	**41**	**42**	**39**	**36**
Cobalt	7440-48-4	2	mg/kg	**14**	**16**	**22**	**18**	**15**
Copper	7440-50-8	5	mg/kg	**9**	**12**	**16**	**12**	**10**
Lead	7439-92-1	5	mg/kg	**9**	**11**	**7**	**8**	**9**
Manganese	7439-96-5	5	mg/kg	**236**	**392**	**492**	**422**	**325**
Nickel	7440-02-0	2	mg/kg	**22**	**35**	**62**	**46**	**33**
Vanadium	7440-62-2	5	mg/kg	**47**	**72**	**45**	**40**	**40**
Zinc	7440-66-6	5	mg/kg	**10**	**12**	**24**	**15**	**12**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-61	IF-63	IF-65	IF-67	IF-69
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-011	EM0806340-012	EM0806340-013	EM0806340-014	EM0806340-015
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
EP068S: Organochlorine Pesticide Surrogate								

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-61	IF-63	IF-65	IF-67	IF-69
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00	01-AUG-2008 15:00
				EM0806340-011	EM0806340-012	EM0806340-013	EM0806340-014	EM0806340-015
EP068S: Organochlorine Pesticide Surrogate - Continued								
Dibromo-DDE	21655-73-2	0.1	%	**73.8**	**81.4**	**98.6**	**90.1**	**86.3**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	**75.8**	**91.0**	**108**	**98.4**	**94.0**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	**92.1**	**89.2**	**92.4**	**88.2**	**90.4**
2-Chlorophenol-D4	93951-73-6	0.1	%	**98.8**	**96.5**	**98.3**	**96.3**	**97.3**
2.4.6-Tribromophenol	118-79-6	0.1	%	**84.6**	**82.8**	**85.4**	**82.5**	**83.6**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	**94.6**	**92.2**	**93.5**	**89.8**	**94.1**
Anthracene-d10	1719-06-8	0.1	%	**98.4**	**98.0**	**96.6**	**96.5**	**97.9**
4-Terphenyl-d14	1718-51-0	0.1	%	**107**	**102**	**103**	**105**	**107**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.1	%	**100**	**108**	**102**	**109**	**115**
Toluene-D8	2037-26-5	0.1	%	**68.1**	**78.0**	**71.1**	**73.4**	**76.4**
4-Bromofluorobenzene	460-00-4	0.1	%	**71.5**	**76.8**	**70.6**	**74.6**	**75.3**

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID	IF-71	IF/QS-4	----	----	----
				Client sampling date / time	01-AUG-2008 15:00	01-AUG-2008 15:00	----	----	----
					EM0806340-016	EM0806340-017	----	----	----
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		**9.3**	----	----	----	----
EA055: Moisture Content									
^ Moisture Content (dried @ 103°C)	----	1.0	%		**10.5**	**20.2**	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	----	----	----
Barium	7440-39-3	10	mg/kg		**670**	**450**	----	----	----
Beryllium	7440-41-7	1	mg/kg		<1	<1	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg		**34**	**30**	----	----	----
Cobalt	7440-48-4	2	mg/kg		**16**	**12**	----	----	----
Copper	7440-50-8	5	mg/kg		**8**	**6**	----	----	----
Lead	7439-92-1	5	mg/kg		**9**	**8**	----	----	----
Manganese	7439-96-5	5	mg/kg		**332**	**174**	----	----	----
Nickel	7440-02-0	2	mg/kg		**34**	**19**	----	----	----
Vanadium	7440-62-2	5	mg/kg		**39**	**48**	----	----	----
Zinc	7440-66-6	5	mg/kg		**10**	**8**	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----

Analytical Results

Sub-Matrix: **SOIL**

Compound	CAS Number	LOR	Unit	Client sample ID: IF-71	IF/QS-4	----	----	----
				Client sampling date / time: 01-AUG-2008 15:00	01-AUG-2008 15:00	----	----	----
				EM0806340-016	EM0806340-017	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	----	----	----
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
EP068S: Organochlorine Pesticide Surrogate								

Analytical Results

Sub-Matrix: SOIL				Client sample ID	IF-71	IF/QS-4	----	----	----
				Client sampling date / time	01-AUG-2008 15:00	01-AUG-2008 15:00	----	----	----
Compound	CAS Number	LOR	Unit		EM0806340-016	EM0806340-017	----	----	----
EP068S: Organochlorine Pesticide Surrogate - Continued									
Dibromo-DDE	21655-73-2	0.1	%		85.9	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.1	%		89.8	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.1	%		92.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%		98.9	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.1	%		85.0	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.1	%		93.9	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%		96.9	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%		104	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.1	%		112	----	----	----	----
Toluene-D8	2037-26-5	0.1	%		75.2	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%		75.0	----	----	----	----

Analytical Results

Sub-Matrix: **WATER**

Compound	CAS Number	LOR	Unit	Client sample ID: IF/TB-3	----	----	----	----
				Client sampling date / time: 01-AUG-2008 15:00	----	----	----	----
				EM0806340-018	**----**	**----**	**----**	**----**
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	----	----	----	----
Barium	7440-39-3	0.001	mg/L	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	42.4	131
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	130
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	53	140
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	76	124
Toluene-D8	2037-26-5	76	124
4-Bromofluorobenzene	460-00-4	72	119
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	24	113
2-Chlorophenol-D4	93951-73-6	23	134
2.4.6-Tribromophenol	118-79-6	19	122
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	30	115
Anthracene-d10	1719-06-8	27	133
4-Terphenyl-d14	1718-51-0	18	137
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	27	130
Phenol-d6	13127-88-3	22	126
2-Chlorophenol-D4	93951-73-6	25	126
2.4.6-Tribromophenol	118-79-6	11	108
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	21	134
1.2-Dichlorobenzene-D4	2199-69-1	22	119
2-Fluorobiphenyl	321-60-8	23	133
Anthracene-d10	1719-06-8	49	133
4-Terphenyl-d14	1718-51-0	43	141
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	70	130
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	130

QUALITY CONTROL REPORT

Work Order	: **EM0806340**	Page	: 1 of 21
Amendment	: **2**		
Client	: **OTEK**	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
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Project	: 3106004 - WERRIBEE AREA 4 - ASBESTOS PIPE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: WERRIBEE AREA 4		
C-O-C number	: ----	Date Samples Received	: 04-AUG-2008
Sampler	: CB	Issue Date	: 14-AUG-2008
Order number	: 38360		
		No. of samples received	: 18
Quote number	: ----	No. of samples analysed	: 18

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

NATA Accredited Laboratory 825

This document is issued in accordance with NATA accreditation requirements.

Accredited for compliance with ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Dilani Fernando	Senior Inorganic Instrument Chemist	Inorganics
Kumara Dadallage	Senior Organic Chemist	Organics
Peter Donaghy	Laboratory Supervisor	Newcastle
Terrance Hettipathirana	Senior ICP/MS Chemist	Inorganics

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been preformed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insuffient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = Chemistry Abstract Services number
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002 : pH (Soils) (QC Lot: 725866)									
EM0806293-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	8.2	8.1	1.2	0% - 20%
EM0806340-009	IF-57	EA002: pH Value	----	0.1	pH Unit	9.8	9.7	1.0	0% - 20%
EA055: Moisture Content (QC Lot: 726236)									
EM0806291-004	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	13.8	15.6	12.5	0% - 50%
EM0806291-011	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.3	11.9	5.1	0% - 50%
EA055: Moisture Content (QC Lot: 726237)									
EM0806340-005	IF-49	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	11.1	10.0	10.4	0% - 50%
EM0806340-012	IF-63	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	29.1	29.2	0.4	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 725746)									
EM0806264-001	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	1	1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	70	90	20.1	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	34	36	3.6	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	14	16	9.1	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	30	31	5.7	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	13	13	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	12	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	492	554	11.8	0% - 20%
		EG005T: Vanadium	7440-62-2	5	mg/kg	47	51	7.6	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	12	15	20.1	No Limit
EM0806340-015	IF-69	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	160	160	0.0	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	36	39	9.7	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	15	18	15.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	33	31	6.2	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	10	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	9	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	325	327	0.6	0% - 20%
		EG005T: Vanadium	7440-62-2	5	mg/kg	40	40	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	11	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 726032)									
EM0806340-005	IF-49	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005T: Total Metals by ICP-AES (QC Lot: 726032) - continued									
EM0806340-005	IF-49	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	260	290	13.4	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	33	35	6.7	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	20	24	14.6	0% - 50%
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	30	34	13.7	0% - 50%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	10	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	13	40.2	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	360	375	4.0	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	44	57	26.0	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	11	10	0.0	No Limit
EM0806340-014	IF-67	EG005T: Beryllium	7440-41-7	1	mg/kg	1	1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	190	180	10.4	0% - 50%
		EG005T: Chromium	7440-47-3	2	mg/kg	39	42	7.8	0% - 20%
		EG005T: Cobalt	7440-48-4	2	mg/kg	18	19	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	46	45	2.9	0% - 20%
		EG005T: Silver	7440-22-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	12	12	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	8	9	0.0	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	422	410	3.0	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	40	48	19.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	15	16	7.3	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 725747)									
EM0806264-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0806340-015	IF-69	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 726031)									
EM0806241-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EM0806291-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 726033)									
EM0806340-005	IF-49	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 726033) - continued									
EM0806340-014	IF-67	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 726053)									
EM0806204-016	Anonymous	EG048: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EK026G: Total Cyanide By Discrete Analyser (QC Lot: 725992)									
EM0806088-016	Anonymous	EK026G: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EM0806330-001	Anonymous	EK026G: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EK040T: Fluoride Total (QC Lot: 727339)									
EM0806289-009	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	90	70	18.6	No Limit
ES0811182-001	Anonymous	EK040T: Fluoride	16984-48-8	40	mg/kg	<40	<40	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 726107)									
EM0806204-016	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.10	mg/kg	<0.10	<0.10	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 726110)									
EM0806340-002	IF-43	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EM0806340-012	IF-63	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 726110) - continued									
EM0806340-012	IF-63	EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 725385)									
EM0806204-016	Anonymous	EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	0.6	<0.5	0.0	No Limit
		EP074-UT: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	7.8	6.4	20.8	0% - 50%
		EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	5.6	4.5	22.7	No Limit
EP074I: Volatile Halogenated Compounds (QC Lot: 725385)									
EM0806204-016	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	<0.01	0.0	No Limit
		EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP074I: Volatile Halogenated Compounds (QC Lot: 725385) - continued									
EM0806204-016	Anonymous	EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
		EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	<0.04	0.0	No Limit
		EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	<0.4	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 726144)									
EM0806340-002	IF-43	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit
EM0806340-012	IF-63	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 726144)									
EM0806340-002	IF-43	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 726144) - continued									
EM0806340-002	IF-43	EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EM0806340-012	IF-63	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075A: Phenolic Compounds (Halogenated) (QC Lot: 726106)									
EM0806204-016	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.4-Dichlorophenol	120-83-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.6-Dichlorophenol	87-65-0	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 4-Chloro-3-Methylphenol	59-50-7	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/58-90-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: Pentachlorophenol	87-86-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 726106)									
EM0806204-016	Anonymous	EP075-EM: Phenol	108-95-2	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Methylphenol	95-48-7	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2-Nitrophenol	88-75-5	1	mg/kg	<1	<1	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075A: Phenolic Compounds (Non-halogenated) (QC Lot: 726106) - continued									
EM0806204-016	Anonymous	EP075-EM: 2.4-Dimethylphenol	105-67-9	1	mg/kg	<1	<1	0.0	No Limit
		EP075-EM: 2.4-Dinitrophenol	51-28-5	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 4-Nitrophenol	100-02-7	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: Dinoseb	88-85-7	5	mg/kg	<5	<5	0.0	No Limit
		EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	5	mg/kg	<5	<5	0.0	No Limit
EP075B: Polynuclear Aromatic Hydrocarbons (QC Lot: 726106)									
EM0806204-016	Anonymous	EP075-EM: Naphthalene	91-20-3	0.5	mg/kg	6.4	5.3	18.7	0% - 50%
		EP075-EM: Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075I: Organochlorine Pesticides (QC Lot: 726106)									
EM0806204-016	Anonymous	EP075-EM: alpha-BHC	319-84-6	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: beta-BHC	319-85-7	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: gamma-BHC	58-89-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: delta-BHC	319-86-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Heptachlor	76-44-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Aldrin	309-00-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Heptachlor epoxide	1024-57-3	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: cis-Chlordane	5103-71-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: trans-Chlordane	5103-74-2	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan 1	959-98-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Dieldrin	60-57-1	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endrin aldehyde	7421-93-4	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endrin	72-20-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Endosulfan 2	33213-65-9	0.03	mg/kg	<0.03	<0.03	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075I: Organochlorine Pesticides (QC Lot: 726106) - continued									
EM0806204-016	Anonymous	EP075-EM: Endosulfan sulfate	1031-07-8	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: Methoxychlor	72-43-5	0.03	mg/kg	<0.03	<0.03	0.0	No Limit
		EP075-EM: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP075-EM: 4.4`-DDT	50-29-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 725342)									
EM0806298-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EM0806340-009	IF-57	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 725385)									
EM0806204-016	Anonymous	EP074-UT: C6 - C9 Fraction	----	10	mg/kg	41	33	21.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 726143)									
EM0806340-002	IF-43	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EM0806340-012	IF-63	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 724168)									
EM0806338-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.024	0.025	0.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.014	0.017	14.3	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP0804284-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.108	0.107	1.3	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.009	0.008	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.007	0.007	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 724168) - continued									
EP0804284-001	Anonymous	EG020A-T: Lead	7439-92-1	0.001	mg/L	0.013	0.013	0.0	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.551	0.531	3.7	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.012	0.015	17.5	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	0.03	0.03	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 726956)									
EM0806071-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EM0806340-018	IF/TB-3	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 725746)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	105	82.4	122
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	105	91.7	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	101	87.4	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	102	88.5	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	104	89.2	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	100	88.2	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	99.7	86.8	117
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	93.4	82	116
EG005T: Total Metals by ICP-AES (QCLot: 726032)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	13.6 mg/kg	106	82.4	122
EG005T: Barium	7440-39-3	10	mg/kg	<10	139 mg/kg	105	91.7	125
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	2.8 mg/kg	101	87.4	122
EG005T: Chromium	7440-47-3	2	mg/kg	<2	60.9 mg/kg	103	88.5	117
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	----	----	----	----
EG005T: Copper	7440-50-8	5	mg/kg	<5	55.1 mg/kg	101	89.2	121
EG005T: Lead	7439-92-1	5	mg/kg	<5	54.9 mg/kg	100	88.2	118
EG005T: Manganese	7439-96-5	5	mg/kg	<5	----	----	----	----
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	----	----	----	----
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.1 mg/kg	99.8	86.8	117
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Silver	7440-22-4	2	mg/kg	<2	5.23 mg/kg	102	72.2	126
EG005T: Tin	7440-31-5	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	----	----	----	----
EG005T: Zinc	7440-66-6	5	mg/kg	<5	105 mg/kg	94.2	82	116
EG035T: Total Recoverable Mercury by FIMS (QCLot: 725747)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	92.0	71.9	119
EG035T: Total Recoverable Mercury by FIMS (QCLot: 726031)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	87.7	71.9	119
EG035T: Total Recoverable Mercury by FIMS (QCLot: 726033)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 726033) - continued								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	1.47 mg/kg	77.6	71.9	119
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 726053)								
EG048: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	97.2	80	120
EK026G: Total Cyanide By Discrete Analyser (QCLot: 725992)								
EK026G: Total Cyanide	57-12-5	1	mg/kg	<1	50 mg/kg	93.2	86.3	118
EK040T: Fluoride Total (QCLot: 727339)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	110 mg/kg	85.4	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 726107)								
EP066-EM: Total Polychlorinated biphenyls	----	0.1	mg/kg	----	0.5 mg/kg	106	61.2	123
		0.10	mg/kg	<0.10	----	----	----	----
EP068A: Organochlorine Pesticides (OC) (QCLot: 726110)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.25 mg/kg	109	47.3	130
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.25 mg/kg	107	45.6	128
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.25 mg/kg	111	55.9	130
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.25 mg/kg	108	51.1	129
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.25 mg/kg	107	56.1	127
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.25 mg/kg	108	51.6	125
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.25 mg/kg	108	54.9	121
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.25 mg/kg	108	56.9	122
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.25 mg/kg	109	57.9	122
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.25 mg/kg	101	56.6	128
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.25 mg/kg	106	57.1	123
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.25 mg/kg	107	56	123
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.25 mg/kg	107	58.4	125
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.25 mg/kg	110	57.9	128
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.25 mg/kg	103	60.6	128
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.25 mg/kg	105	55.7	126
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.25 mg/kg	112	47.1	123
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.25 mg/kg	107	57.2	128
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.25 mg/kg	109	52.5	134
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.25 mg/kg	108	57.7	126
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.25 mg/kg	118	53.4	139
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 725385)								
EP074-UT: Benzene	71-43-2	0.2	mg/kg	<0.2	2.1 mg/kg	89.0	80.0	120
EP074-UT: Toluene	108-88-3	0.5	mg/kg	<0.5	2.1 mg/kg	88.0	80.0	120
EP074-UT: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2.1 mg/kg	89.6	80.0	120
EP074-UT: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	4.2 mg/kg	90.9	80.0	120
	106-42-3							

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 725385) - continued								
EP074-UT: Styrene	100-42-5	0.5	mg/kg	<0.5	0.1 mg/kg	89.1	76.0	117
EP074-UT: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2.1 mg/kg	92.0	80.0	120
EP074I: Volatile Halogenated Compounds (QCLot: 725385)								
EP074-UT: Vinyl chloride	75-01-4	0.02	mg/kg	<0.02	0.1 mg/kg	# 58.6	65.6	112
EP074-UT: 1.1-Dichloroethene	75-35-4	0.01	mg/kg	<0.01	0.1 mg/kg	74.0	70.8	122
EP074-UT: Methylene chloride	75-09-2	0.4	mg/kg	<0.4	2.1 mg/kg	87.7	75.3	131
EP074-UT: trans-1.2-Dichloroethene	156-60-5	0.02	mg/kg	<0.02	0.1 mg/kg	82.0	79.0	121
EP074-UT: cis-1.2-Dichloroethene	156-59-2	0.01	mg/kg	<0.01	0.1 mg/kg	90.3	80.0	122
EP074-UT: Chloroform	67-66-3	0.02	mg/kg	<0.02	0.1 mg/kg	88.7	70.4	115
EP074-UT: 1.1.1-Trichloroethane	71-55-6	0.01	mg/kg	<0.01	0.1 mg/kg	81.8	72.0	120
EP074-UT: Carbon Tetrachloride	56-23-5	0.01	mg/kg	<0.01	0.1 mg/kg	73.7	65.5	120
EP074-UT: 1.2-Dichloroethane	107-06-2	0.02	mg/kg	<0.02	0.1 mg/kg	100	71.6	128
EP074-UT: Trichloroethene	79-01-6	0.02	mg/kg	<0.02	0.1 mg/kg	86.9	75.7	124
EP074-UT: 1.1.2-Trichloroethane	79-00-5	0.04	mg/kg	<0.04	0.1 mg/kg	106	80.0	120
EP074-UT: Tetrachloroethene	127-18-4	0.02	mg/kg	<0.02	0.1 mg/kg	83.7	70.0	130
EP074-UT: 1.1.1.2-Tetrachloroethane	630-20-6	0.01	mg/kg	<0.01	----	----	----	----
EP074-UT: 1.1.2.2-Tetrachloroethane	79-34-5	0.02	mg/kg	<0.02	0.1 mg/kg	111	75.7	126
EP074-UT: Hexachlorobutadiene	87-68-3	0.02	mg/kg	<0.02	0.1 mg/kg	# 66.2	68.4	118
EP074-UT: Chlorobenzene	108-90-7	0.02	mg/kg	<0.02	0.1 mg/kg	94.2	79.7	124
EP074-UT: 1.4-Dichlorobenzene	106-46-7	0.02	mg/kg	<0.02	0.1 mg/kg	85.2	72.3	116
EP074-UT: 1.2-Dichlorobenzene	95-50-1	0.02	mg/kg	<0.02	0.1 mg/kg	92.7	80.0	120
EP074-UT: 1.2.4-Trichlorobenzene	120-82-1	0.01	mg/kg	<0.01	0.1 mg/kg	75.8	73.0	118
EP075(SIM)A: Phenolic Compounds (QCLot: 726144)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	10 mg/kg	90.1	72.1	116
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	10 mg/kg	90.3	72.3	116
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	10 mg/kg	91.2	68.8	117
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	<1.0	20 mg/kg	89.6	73.5	116
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	10 mg/kg	85.9	65	119
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	10 mg/kg	97.5	73	114
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	10 mg/kg	89.3	70.8	115
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	10 mg/kg	89.5	75	113
EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	<0.5	10 mg/kg	85.3	71.3	114
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	10 mg/kg	84.9	67	115
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	10 mg/kg	84.7	70	116
EP075(SIM): Pentachlorophenol	87-86-5	2.0	mg/kg	<2.0	10 mg/kg	75.1	13.6	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 726144)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	10 mg/kg	91.4	73.8	114
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	10 mg/kg	86.5	73.2	116
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	10 mg/kg	92.5	75	114

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 726144) - continued								
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	10 mg/kg	85.7	73.4	119
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	10 mg/kg	90.9	75.3	113
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	10 mg/kg	93.1	75.5	114
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	10 mg/kg	94.3	75.6	115
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	10 mg/kg	93.4	73.8	115
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	10 mg/kg	93.2	74.5	114
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	10 mg/kg	93.2	75.3	114
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	10 mg/kg	86.5	72.7	115
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	10 mg/kg	90.8	70.2	120
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	10 mg/kg	92.6	73.9	115
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	10 mg/kg	89.9	65.5	127
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	10 mg/kg	89.2	65.3	127
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	10 mg/kg	90.0	64.3	127
EP075A: Phenolic Compounds (Halogenated) (QCLot: 726106)								
EP075-EM: 2-Chlorophenol	95-57-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	107	39.8	139
EP075-EM: 2.4-Dichlorophenol	120-83-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	103	35	135
EP075-EM: 2.6-Dichlorophenol	87-65-0	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	113	36.7	136
EP075-EM: 4-Chloro-3-Methylphenol	59-50-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	110	45.2	141
EP075-EM: 2.4.5-Trichlorophenol	95-95-4	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	106	41.4	137
EP075-EM: 2.4.6-Trichlorophenol	88-06-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	109	42.2	143
EP075-EM: 2.3.5.6-Tetrachlorophenol	935-95-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	116	41	139
EP075-EM: 2.3.4.5 & 2.3.4.6-Tetrachlorophenol	4901-51-3/5 8-90-2	0.05	mg/kg	<0.05	1 mg/kg	104	23.6	145
EP075-EM: Pentachlorophenol	87-86-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	85.6	25	144
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 726106)								
EP075-EM: Phenol	108-95-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	108	44	144
EP075-EM: 2-Methylphenol	95-48-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	100	39.1	135
EP075-EM: 3- & 4-Methylphenol	1319-77-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	1.0 mg/kg	104	33.8	176

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 726106) - continued								
EP075-EM: 2-Nitrophenol	88-75-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	109	25.6	145
EP075-EM: 2.4-Dimethylphenol	105-67-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	66.9	10	138
EP075-EM: 2.4-Dinitrophenol	51-28-5	2	mg/kg	<2	3 mg/kg	113	15.9	136
EP075-EM: 4-Nitrophenol	100-02-7	2	mg/kg	<2	3 mg/kg	104	41.1	155
EP075-EM: 2-Methyl-4.6-dinitrophenol	8071-51-0	2	mg/kg	<2	3 mg/kg	# 135	15.4	133
EP075-EM: Dinoseb	88-85-7	2	mg/kg	<2	3 mg/kg	123	32	136
EP075-EM: 2-Cyclohexyl-4.6-Dinitrophenol	131-89-5	2	mg/kg	<2	2.5 mg/kg	145	10	169
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 726106)								
EP075-EM: Naphthalene	91-20-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	114	41.2	136
EP075-EM: Acenaphthene	83-32-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	126	48	133
EP075-EM: Acenaphthylene	208-96-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	110	45.2	137
EP075-EM: Fluorene	86-73-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	127	49.6	136
EP075-EM: Phenanthrene	85-01-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	120	61.8	132
EP075-EM: Anthracene	120-12-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	113	61.3	127
EP075-EM: Fluoranthene	206-44-0	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	117	66.2	134
EP075-EM: Pyrene	129-00-0	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	120	67.5	132
EP075-EM: Benz(a)anthracene	56-55-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	118	64.9	133
EP075-EM: Chrysene	218-01-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	120	66.2	136
EP075-EM: Benzo(b) & Benzo(k)fluoranthene	205-99-2 207-08-9	0.05	mg/kg	<0.05	1.0 mg/kg	119	65.4	133
EP075-EM: Benzo(a)pyrene	50-32-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	108	62.4	131
EP075-EM: Indeno(1.2.3.cd)pyrene	193-39-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	118	31.5	148
EP075-EM: Dibenz(a.h)anthracene	53-70-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	120	33.3	145
EP075-EM: Benzo(g.h.i)perylene	191-24-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	121	28.9	153

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075I: Organochlorine Pesticides (QCLot: 726106)								
EP075-EM: alpha-BHC	319-84-6	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	129	54.9	137
EP075-EM: Hexachlorobenzene (HCB)	118-74-1	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	126	24.4	133
EP075-EM: beta-BHC	319-85-7	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	124	47	138
EP075-EM: gamma-BHC	58-89-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	117	60.3	135
EP075-EM: delta-BHC	319-86-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	119	68.1	132
EP075-EM: Heptachlor	76-44-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	114	61.4	132
EP075-EM: Aldrin	309-00-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	111	63.1	131
EP075-EM: Heptachlor epoxide	1024-57-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	119	67.9	129
EP075-EM: cis-Chlordane	5103-71-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	121	38.8	137
EP075-EM: trans-Chlordane	5103-74-2	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	117	65	133
EP075-EM: Endosulfan 1	959-98-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	118	63.5	136
EP075-EM: 4.4`-DDE	72-55-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	118	62.3	133
EP075-EM: Dieldrin	60-57-1	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	123	67.6	134
EP075-EM: Endrin aldehyde	7421-93-4	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	133	25.1	177
EP075-EM: Endrin	72-20-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	123	60.7	137
EP075-EM: Endosulfan 2	33213-65-9	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	119	67.8	138
EP075-EM: 4.4`-DDD	72-54-8	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	120	66.5	135
EP075-EM: Endosulfan sulfate	1031-07-8	0.02	mg/kg	<0.02	----	----	----	----
EP075-EM: 4.4`-DDT	50-29-3	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	118	61	139
EP075-EM: Methoxychlor	72-43-5	0.02	mg/kg	<0.02	----	----	----	----
		0.025	mg/kg	----	0.5 mg/kg	128	64.2	138
EP080/071: Total Petroleum Hydrocarbons (QCLot: 725342)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 725342) - continued								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	32 mg/kg	100	81	123
EP080/071: Total Petroleum Hydrocarbons (QCLot: 725385)								
EP074-UT: C6 - C9 Fraction	----	10	mg/kg	<10	33.1 mg/kg	85.5	73.2	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 726143)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	606 mg/kg	91.1	69	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	1460 mg/kg	118	69	127
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	342 mg/kg	109	70	130

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 724168)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	83.7	111
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	104	80	123
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	99.2	85	113
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	83.7	114
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	104	84.4	114
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	104	83.4	114
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	107	84.9	111
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	104	87.1	113
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	104	86.1	112
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	103	84	113
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	105	85.1	114
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.5	79.4	118
EG035T: Total Recoverable Mercury by FIMS (QCLot: 726956)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0100 mg/L	106	80.0	120

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery (%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 725746)							
EM0806272-002	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	72.4	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	104	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	112	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	108	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	95.4	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	109	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	99.6	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	101	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	101	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	94.0	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	97.7	70	130
EG005T: Total Metals by ICP-AES (QCLot: 726032)							
EM0806340-006	IF-51	EG005T: Arsenic	7440-38-2	50 mg/kg	84.3	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	# Not Determined	70	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	104	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	90.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	91.4	70	130
		EG005T: Copper	7440-50-8	50 mg/kg	103	70	130
		EG005T: Lead	7439-92-1	50 mg/kg	91.3	70	130
		EG005T: Manganese	7439-96-5	50 mg/kg	126	70	130
		EG005T: Molybdenum	7439-98-7	50 mg/kg	70.3	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	116	70	130
		EG005T: Selenium	7782-49-2	50 mg/kg	87.2	70	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	88.8	70	130
		EG005T: Zinc	7440-66-6	50 mg/kg	96.8	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 725747)							
EM0806272-002	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	80.3	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 726031)							
EM0806241-008	Anonymous	EG035T: Mercury	7439-97-6	5.0 mg/kg	80.3	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 726033)							
EM0806340-006	IF-51	EG035T: Mercury	7439-97-6	5.0 mg/kg	82.2	70	130
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 726053)							
EM0806204-018	Anonymous	EG048: Hexavalent Chromium	18540-29-9	40 mg/kg	# Not Determined	70	130
EK026G: Total Cyanide By Discrete Analyser (QCLot: 725992)							

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EK026G: Total Cyanide By Discrete Analyser (QCLot: 725992) - continued							
EM0806129-006	Anonymous	EK026G: Total Cyanide	57-12-5	50 mg/kg	93.9	70	130
EK040T: Fluoride Total (QCLot: 727339)							
EM0806289-009	Anonymous	EK040T: Fluoride	16984-48-8	500 mg/kg	86.2	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 726107)							
EM0806264-001	Anonymous	EP066-EM: Total Polychlorinated biphenyls	----	0.5 mg/kg	105	67	123
EP068A: Organochlorine Pesticides (OC) (QCLot: 726110)							
EM0806340-003	IF-45	EP068: gamma-BHC	58-89-9	0.25 mg/kg	106	70	130
		EP068: Heptachlor	76-44-8	0.25 mg/kg	90.0	70	130
		EP068: Aldrin	309-00-2	0.25 mg/kg	97.6	70	130
		EP068: Dieldrin	60-57-1	0.25 mg/kg	94.2	70	130
		EP068: Endrin	72-20-8	0.25 mg/kg	99.2	70	130
		EP068: 4.4`-DDT	50-29-3	0.25 mg/kg	89.0	70	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 725385)							
EM0806204-018	Anonymous	EP074-UT: Benzene	71-43-2	2 mg/kg	77.6	70	130
		EP074-UT: Toluene	108-88-3	2 mg/kg	# 196	70	130
EP074I: Volatile Halogenated Compounds (QCLot: 725385)							
EM0806204-018	Anonymous	EP074-UT: 1.1-Dichloroethene	75-35-4	2 mg/kg	70.4	70	130
		EP074-UT: Trichloroethene	79-01-6	2 mg/kg	78.5	70	130
		EP074-UT: Chlorobenzene	108-90-7	2 mg/kg	86.0	70	130
EP075(SIM)A: Phenolic Compounds (QCLot: 726144)							
EM0806340-003	IF-45	EP075(SIM): Phenol	108-95-2	10 mg/kg	96.0	70	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	95.3	70	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	96.3	70	130
		EP075(SIM): 4-Chloro-3-Methylphenol	59-50-7	10 mg/kg	85.9	70	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	82.4	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 726144)							
EM0806340-003	IF-45	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	95.0	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	103	70	130
EP075A: Phenolic Compounds (Halogenated) (QCLot: 726106)							
EM0806204-018	Anonymous	EP075-EM: 2-Chlorophenol	95-57-8	1 mg/kg	113	70	130
		EP075-EM: 4-Chloro-3-Methylphenol	59-50-7	1 mg/kg	114	70	130
		EP075-EM: Pentachlorophenol	87-86-5	1 mg/kg	90.4	70	130
EP075A: Phenolic Compounds (Non-halogenated) (QCLot: 726106)							
EM0806204-018	Anonymous	EP075-EM: Phenol	108-95-2	1 mg/kg	109	70	130
		EP075-EM: 2-Nitrophenol	88-75-5	1 mg/kg	99.7	70	130
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 726106)							

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP075B: Polynuclear Aromatic Hydrocarbons (QCLot: 726106) - continued							
EM0806204-018	Anonymous	EP075-EM: Acenaphthene	83-32-9	1 mg/kg	123	70	130
		EP075-EM: Pyrene	129-00-0	1 mg/kg	# 139	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 725342)							
EM0806341-002	Anonymous	EP080: C6 - C9 Fraction	----	28 mg/kg	75.1	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 725385)							
EM0806204-018	Anonymous	EP074-UT: C6 - C9 Fraction	----	28 mg/kg	112	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 726143)							
EM0806340-001	IF-41	EP071: C10 - C14 Fraction	----	606 mg/kg	71.2	60	130
		EP071: C15 - C28 Fraction	----	1460 mg/kg	96.9	60	130
		EP071: C29 - C36 Fraction	----	342 mg/kg	104	60	130

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Spike Recovery (%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 724168)							
EM0806338-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	111	70	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	111	70	130
		EG020A-T: Barium	7440-39-3	1 mg/L	107	70	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	108	70	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	102	70	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	108	70	130
		EG020A-T: Copper	7440-50-8	1 mg/L	106	70	130
		EG020A-T: Lead	7439-92-1	1 mg/L	99.8	70	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	99.7	70	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	107	70	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	108	70	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	104	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 726956)							
EM0806071-002	Anonymous	EG035T: Mercury	7439-97-6	0.0100 mg/L	86.9	70	130

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: **EM0806340**	Page	: 1 of 12
Amendment	: **2**		
Client	: OTEK	Laboratory	: Environmental Division Melbourne
Contact	: MR TOM SANTWYK-ANDERSON	Contact	: Paul Loewy
Address	: LEVEL 1, 222 ST KILDA RD ST KILDA VIC, AUSTRALIA 3182	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: tsantwyk-anderson@otek.com.au	E-mail	: paul.loewy@alsenviro.com
Telephone	: +61 03 9525 5155	Telephone	: +61-3-8549 9600
Facsimile	: +61 03 9593 8555	Facsimile	: +61-3-8549 9601
Project	: 3106004 - WERRIBEE AREA 4 - ASBESTOS PIPE REMOVAL	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: WERRIBEE AREA 4		
C-O-C number	: ----	Date Samples Received	: 04-AUG-2008
Sampler	: CB	Issue Date	: 14-AUG-2008
Order number	: 38360		
		No. of samples received	: 18
Quote number	: ----	No. of samples analysed	: 18

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers

Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non -volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: ✗ = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002 : pH (Soils)							
Soil Glass Jar - Unpreserved							
IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71	**01-AUG-2008**	**11-AUG-2008**	08-AUG-2008	✗	**11-AUG-2008**	11-AUG-2008	✓
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
IF-41, IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71, IF/QS-4	**01-AUG-2008**	**----**	----	----	**08-AUG-2008**	08-AUG-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved							
IF-41, IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71, IF/QS-4	**01-AUG-2008**	**08-AUG-2008**	28-JAN-2009	✓	**10-AUG-2008**	28-JAN-2009	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved							
IF-41, IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71, IF/QS-4	**01-AUG-2008**	**08-AUG-2008**	28-JAN-2009	✓	**11-AUG-2008**	29-AUG-2008	✓
EG048: Hexavalent Chromium (Alkaline Digest)							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**09-AUG-2008**	29-AUG-2008	✓	**11-AUG-2008**	16-AUG-2008	✓
EK026G: Total Cyanide By Discrete Analyser							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**09-AUG-2008**	08-AUG-2008	×	**11-AUG-2008**	23-AUG-2008	✓
EK040T: Fluoride Total							
Pulp Bag							
IF-41	**01-AUG-2008**	**----**	----	----	**07-AUG-2008**	08-AUG-2008	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**10-AUG-2008**	17-SEP-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved							
IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**09-AUG-2008**	17-SEP-2008	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**08-AUG-2008**	15-AUG-2008	✓
EP074I: Volatile Halogenated Compounds							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**08-AUG-2008**	15-AUG-2008	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved							
IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**10-AUG-2008**	17-SEP-2008	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**10-AUG-2008**	17-SEP-2008	✓
EP075A: Phenolic Compounds (Halogenated)							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**10-AUG-2008**	17-SEP-2008	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075A: Phenolic Compounds (Non-halogenated)							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**10-AUG-2008**	17-SEP-2008	✓
EP075B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**10-AUG-2008**	17-SEP-2008	✓
EP075I: Organochlorine Pesticides							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**10-AUG-2008**	17-SEP-2008	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved							
IF-41	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**08-AUG-2008**	15-AUG-2008	✓
Soil Glass Jar - Unpreserved							
IF-41, IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71, IF/QS-4	**01-AUG-2008**	**08-AUG-2008**	15-AUG-2008	✓	**10-AUG-2008**	17-SEP-2008	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered							
IF/TB-3	**01-AUG-2008**	**06-AUG-2008**	28-JAN-2009	✓	**11-AUG-2008**	28-JAN-2009	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered							
IF/TB-3	**01-AUG-2008**	**----**	----	----	**11-AUG-2008**	29-AUG-2008	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	4	40	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	2	16	**12.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PCB - VIC EPA 448.3 Screen	EP066-EM	1	9	**11.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	2	15	**13.3**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
pH (1:5)	EA002	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	9	**11.1**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Cyanide By Discrete Analyser	EK026G	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Fluoride	EK040T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	6	**16.7**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	6	49	**12.2**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	4	40	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	6	**16.7**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	16	**6.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PCB - VIC EPA 448.3 Screen	EP066-EM	1	9	**11.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	15	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	9	**11.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Cyanide By Discrete Analyser	EK026G	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Fluoride	EK040T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	6	**16.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	49	**6.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	6	**16.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	16	**6.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PCB - VIC EPA 448.3 Screen	EP066-EM	1	9	**11.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	15	**6.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	9	**11.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Cyanide By Discrete Analyser	EK026G	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Fluoride	EK040T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	6	**16.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Mercury by FIMS	EG035T	3	49	**6.1**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	6	**16.7**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	16	**6.3**	**5.0**	✓	ALS QCS3 requirement
PCB - VIC EPA 448.3 Screen	EP066-EM	1	9	**11.1**	**5.0**	✓	ALS QCS3 requirement
Pesticides by GCMS	EP068	1	15	**6.7**	**5.0**	✓	ALS QCS3 requirement
Semivolatile Organic Compounds - Waste Classification	EP075-EM	1	9	**11.1**	**5.0**	✓	ALS QCS3 requirement
Total Cyanide By Discrete Analyser	EK026G	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Fluoride	EK040T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Total Hexavalent Chromium by Alkaline Digestion	EG048	1	6	**16.7**	**5.0**	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	3	49	**6.1**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	40	**5.0**	**5.0**	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement
Volatile Organic Compounds - Ultra-trace	EP074-UT	1	6	**16.7**	**5.0**	✓	ALS QCS3 requirement

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	2	16	**12.5**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	2	20	**10.0**	**10.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	16	**6.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	16	**6.3**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.0**	**5.0**	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	16	**6.3**	**5.0**	✓	ALS QCS3 requirement
Total Metals by ICP-MS - Suite A	EG020A-T	1	20	**5.0**	**5.0**	✓	ALS QCS3 requirement

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	(APHA 21st ed., 4500H+) pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM (1999) Schedule B(3) (Method 103)
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Total Hexavalent Chromium by Alkaline Digestion	EG048	SOIL	USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by UV-VIS spectrophotometer following pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)
Total Cyanide By Discrete Analyser	EK026G	SOIL	APHA 21st 4500 CN - C & N. Caustic leach extracts of the sample are distilled with sulphuric acid, converting all CN species to HCN. The distillates are analyzed for CN by Discrete Analyser. This method is compliant with NEPM (1999) Schedule B(3) (Method 403)
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
PCB - VIC EPA 448.3 Screen	EP066-EM	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
TPH (C10 - C36) Sum	EP071-SUM	SOIL	In-house: Summation of the results of the semivolatile TPH bands. Results less than the level of reporting contribute zero to the sum.
Volatile Organic Compounds - Ultra-trace	* EP074-UT	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS in partial SIM/Scan mode. Quantification is by comparison against an established multi-point calibration curves. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)

Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds - Ultra-trace - Summations	EP074-UT-SUM	SOIL	Summation of MAHs and VHCs
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
Semivolatile Organic Compounds - Waste Classification	* EP075-EM	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 502)
SVOC - Waste Classification (Sums)	EP075-EM-SUM	SOIL	Summations for EP075 (EM variation)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	(APHA 21st ed., 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020): The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	AS 3550, APHA 21st ed. 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Preparation Methods	Method	Matrix	Method Descriptions
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	USEPA SW846, Method 3060A.
NaOH leach for TCN in Soils	EK026PR	SOIL	APHA 21st ed., 4500 CN- C & N. Samples are extracted by end-over-end tumbling with NaOH.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Methanolic Extraction of Soils - Ultra-trace.	ORG16-UT	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids - VIC EPA Screen	ORG17A-EM	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	USEPA SW846-3005 Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (1999) Schedule B(3) (Appdx. 2)

Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EP074I: Volatile Halogenated Compounds	817038-001	----	**Vinyl chloride**	75-01-4	58.6 %	65.6-112%	**Recovery less than lower control limit**
EP074I: Volatile Halogenated Compounds	817038-001	----	**Hexachlorobutadiene**	87-68-3	66.2 %	68.4-118%	**Recovery less than lower control limit**
EP075A: Phenolic Compounds (Non-halogenated)	818001-001	----	**2-Methyl-4.6-dinitrophenol**	8071-51-0	135 %	15.4-133%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EG005T: Total Metals by ICP-AES	EM0806340-006	IF-51	**Barium**	7440-39-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG048: Hexavalent Chromium (Alkaline Digest)	EM0806204-018	Anonymous	**Hexavalent Chromium**	18540-29-9	Not Determined	----	**Matrix spike recovery not determined due to sample matrix interference.**
EP074A: Monocyclic Aromatic Hydrocarbons	EM0806204-018	Anonymous	**Toluene**	108-88-3	196 %	70-130%	**Recovery greater than upper data quality objective**
EP075B: Polynuclear Aromatic Hydrocarbons	EM0806204-018	Anonymous	**Pyrene**	129-00-0	139 %	70-130%	**Recovery greater than upper data quality objective**

- **For all matrices, no Method Blank value outliers occur.**
- **For all matrices, no Duplicate outliers occur.**

Regular Sample Surrogates

- **For all regular sample matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

Matrix: **SOIL**

Method	*Extraction / Preparation*			*Analysis*		
Container / Client Sample ID(s)	*Date extracted*	*Due for extraction*	***Days overdue***	*Date analysed*	*Due for analysis*	***Days overdue***
EA002 : pH (Soils)						

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA002 : pH (Soils) - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved						
IF-43, IF-45, IF-47, IF-49, IF-51, IF-53, IF-55, IF-57, IF-59, IF-61, IF-63, IF-65, IF-67, IF-69, IF-71	11-AUG-2008	08-AUG-2008	**3**	----	----	----
EK026G: Total Cyanide By Discrete Analyser						
Soil Glass Jar - Unpreserved						
IF-41	09-AUG-2008	08-AUG-2008	**1**	----	----	----

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- **No Quality Control Sample Frequency Outliers exist.**

Chain of Custody & Analysis Request

LAB	ALS
ADDRESS	4 Westall Road, Springvale, VIC, 3171
LAB CONTACT	Paul Lowy
PHONE	(03) 8549 9600

Page 1 of 3

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to ~~vicreception@otek.com.au &~~ tsantywk-anderson@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT # 3106004

PROJECT NAME: Werribee Area 4 Asbestos Pipe removal

COLLECTORS NAME: Christian Beasley

LAB JOB #:

PRELIM. RESULTS BY: ☐ VERBAL ☑ FAX ☑ EMAIL

FINAL REPORT TO: tsantywk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08

OTEK PO No.: 38360

REMARKS

ANALYSIS REQUIRED & METHOD CODE

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	Vic EPA 448.3	TPH	OCP	Phenols	PAH	Metals (S-3)	pH					ON HOLD
DISCRETE SAMPLE REQUEST:																									
1				X			X				01/08/08			X											X
1F-1	1			X			X																		
1F-2				X			X								X	X	X	X	X	X					X
1F-3	2			X			X								X	X	X	X	X	X					
1F-4				X			X								X	X	X	X	X	X					X
1F-5	3			X			X								X	X	X	X	X	X					
1F-6				X			X								X	X	X	X	X	X					X
1F-7	4			X			X								X	X	X	X	X	X					
1F-8				X			X								X	X	X	X	X	X					X
1F-9	5			X			X								X	X	X	X	X	X					
1F-10				X			X								X	X	X	X	X	X					X
1F-11	6			X			X								X	X	X	X	X	X					
1F-12				X			X																		X
1F-13	7			X			X								X	X	X	X	X	X					
1F-14				X			X																		X
1F-15	8			X			X								X	X	X	X	X	X					
COMPOSITE SAMPLE REQUEST:																									
1F-16				X			X				1/08/08														X
1F-17	9			X			X								X	X	X	X	X	X					
1F-18				X			X																		X
1F-19	10			X			X								X	X	X	X	X	X					
1F-20				X			X																		X
1F-21	11			X			X								X	X	X	X	X	X					
1F-22				X			X																		X
1F-23	12			X			X								X	X	X	X	X	X					

Environmental Division
Melbourne
Work Order
EM0806340

Telephone : +61-3-8549 9600

Relinquished by: Christian Beasley	Date 4/08/08	Time	Received by:	572	Date	Time	Custody Seals Intact? Yes / No / NA
Relinquished by:	Date 04/08/08	Time 11:05	Received by:		Date	Time	Samples Received Chilled? Yes / No

Additional Comments: Please provide electronic results in ESDAT format

LAB	ALS	Page 2 of 3	
ADDRESS	4 Westall Road, Springvale, VIC, 3171		
LAB CONTACT	Paul Lowy		
PHONE	(03) 8549 9600		

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Level 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
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Please email results & invoice to
~~vicreception@otek.com.au~~ &
tsantywk-anderson@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT #	3106004
PROJECT NAME	Werribee Area 4 Asbestos Pipe removal
COLLECTORS NAME	Christian Beasley
LAB JOB #	

PRELIM. RESULTS BY: ☐ VERBAL ☑ FAX ☑ EMAIL

FINAL REPORT TO: tsantywk-anderson@otek.com.au

LAB QUOTE REF: ME/055/08 | OTEK PO No.: 38360

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATION METHOD: ICE	ACIDIFIED	OTHER	NONE	SAMPLING DATE	No. OF CONTAINERS	FORM COMPOSITE SAMPLE	ANALYSIS REQUIRED & METHOD CODE: Vic EPA 448.3	TPH	OCP	Phenols	PAH	Metals (S-3)	pH	TPH (C_{10}-C_{36})				ON HOLD	REMARKS
DISCRETE SAMPLE REQUEST:																										
1F-24				X			X				1/08/08														X	
1F-25	13			X			X								X	X	X	X	X	X					X	
1F-26				X			X																		X	
1F-27	14			X			X								X	X	X	X	X	X						
1F-28				X			X																		X	
1F-29	15			X			X								X	X	X	X	X	X						
1F-30				X			X																		X	
1F-31	16			X			X								X	X	X	X	X	X						
1F-32				X			X																		X	
1F/QS-1	17			X			X				1/08/08								X		X					
1F/QS-1A				X			X				"								~~X~~		~~X~~					Please send to Labmark
1F/TB-1	18		X				X				"								X		X					
COMPOSITE SAMPLE REQUEST:																										

Relinquished by:	Date	Time	Received by:	Date	Time
C Beasley	4/08/08		[signature] 5:22		
Relinquished by:	Date	Time	Received by:	Date	Time

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

Additional Comments:

Please provide electronic results in ESDAT format

LabMark
ENVIRONMENTAL LABORATORIES

Amended Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: Tom Santwyk-Anderson

OTEK Australia
INSPECTION VERIFICATION RECORD

PASS	FAIL
✓	

NAME (Print) CHRISTIAN BEASLEY
SIGNATURE CuBeasley
DATE 21/08/08

Project	**08ENME0020551**
Client Reference	3106004
	Werribee Area 4 Asbestos Pipe Removal
Received Date	06/08/2008 01:00:00 PM

Customer Sample ID			**IF/QS-4A**
Amdel Sample Number			**1118285**
Date Sampled			**01/08/2008**
VOC			
Test/Reference	PQL	Unit	
1100 BTEX &(C6-C9) in Soil by P&T			
4-Bromofluorobenzene - Surrogate	-	%	109
Benzene	0.2	mg/kg	<0.2
Toluene	1	mg/kg	<1.0
Ethylbenzene	1	mg/kg	<1.0
Meta- & Para- Xylene	2	mg/kg	<2.0
Ortho-Xylene	1	mg/kg	<1.0
Total Xylenes	3	mg/kg	<3.0
C6-C9 Fraction	5	mg/kg	<5.0
SVOC			
Test/Reference	PQL	Unit	
2000 TPH (C10 - C36) in Soil by GC			
C10-C14 Fraction	10	mg/kg	13
C15-C28 Fraction	20	mg/kg	<20
C29-C36 Fraction	20	mg/kg	<20
Metals			
Test/Reference	PQL	Unit	
3400 Mercury in Soil by FIMS			
Mercury	0.01	mg/kg	<0.01
3100 Total Metals in Soil By ICP/MS			
Antimony	2	mg/kg	<2
Arsenic	2	mg/kg	<2
Barium	2	mg/kg	220
Beryllium	2	mg/kg	<2
Boron	2	mg/kg	15
Cadmium	2	mg/kg	<2
Chromium	2	mg/kg	39
Cobalt	2	mg/kg	14
Copper	2	mg/kg	8.0
Lead	2	mg/kg	12
Manganese	2	mg/kg	120
Molybdenum	2	mg/kg	<2
Nickel	2	mg/kg	19
Selenium	2	mg/kg	<2
Tin	2	mg/kg	<2
Vanadium	2	mg/kg	43

This document is issued in accordance with NATA's accreditation requirements.
Accredited for compliance with ISO/IEC 17025

Accreditation Number: 1645

LabMark ENVIRONMENTAL LABORATORIES

Amended Certificate of Analysis

OTEK AUSTRALIA PTY LTD
Level 1
222 St Kilda Road
ST KILDA VIC 3182

Attention: Tom Santwyk-Anderson

Project	**08ENME0020551**
Client Reference	3106004
	Werribee Area 4 Asbestos Pipe Removal
Received Date	06/08/2008 01:00:00 PM

Customer Sample ID			**IF/QS-4A**
Amdel Sample Number			**1118285**
Date Sampled			**01/08/2008**

VOC

Test/Reference	PQL	Unit	
1100 BTEX &(C6-C9) in Soil by P&T			
4-Bromofluorobenzene - Surrogate	-	%	109
Benzene	0.2	mg/kg	<0.2
Toluene	1	mg/kg	<1.0
Ethylbenzene	1	mg/kg	<1.0
Meta- & Para- Xylene	2	mg/kg	<2.0
Ortho-Xylene	1	mg/kg	<1.0
Total Xylenes	3	mg/kg	<3.0
C6-C9 Fraction	5	mg/kg	<5.0

SVOC

Test/Reference	PQL	Unit	
2000 TPH (C10 - C36) in Soil by GC			
C10-C14 Fraction	10	mg/kg	13
C15-C28 Fraction	20	mg/kg	<20
C29-C36 Fraction	20	mg/kg	<20

Metals

Test/Reference	PQL	Unit	
3400 Mercury in Soil by FIMS			
Mercury	0.01	mg/kg	<0.01
3100 Total Metals in Soil By ICP/MS			
Antimony	2	mg/kg	<2
Arsenic	2	mg/kg	<2
Barium	2	mg/kg	220
Beryllium	2	mg/kg	<2
Boron	2	mg/kg	15
Cadmium	2	mg/kg	<2
Chromium	2	mg/kg	39
Cobalt	2	mg/kg	14
Copper	2	mg/kg	8.0
Lead	2	mg/kg	12
Manganese	2	mg/kg	120
Molybdenum	2	mg/kg	<2
Nickel	2	mg/kg	19
Selenium	2	mg/kg	<2
Tin	2	mg/kg	<2
Vanadium	2	mg/kg	43

Customer Sample ID			**IF/QS-4A**
Amdel Sample Number			**1118285**
Date Sampled			**01/08/2008**
Metals			
Test/Reference	PQL	Unit	
Zinc	2	mg/kg	13
Miscellaneous			
Test/Reference	PQL	Unit	
5000 Moisture Content			
% Moisture	1	%	31

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

Description	Extracted	Analysed
1100 BTEX &(C6-C9) in Soil by P&T	07/08/2008	08/08/2008
2000 TPH (C10 - C36) in Soil by GC	07/08/2008	08/08/2008
3100 Total Metals in Soil By ICP/MS	08/08/2008	11/08/2008
3400 Mercury in Soil by FIMS	08/08/2008	08/08/2008
5000 Moisture Content		07/08/2008

Amdel Internal Quality Control Review

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. Amdel QC Acceptance/Rejection criteria are available on request.
3. Proficiency trial results are available on request.
4. Actual PQLs are matrix dependant. Quotes PQLs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spike or surrogate recoveries.
6. Test samples duplicated or spiked, are for this job only and are identified in the following QC report.
7. SVOC analyses on waters are performed on homogenized, unfiltered sample, unless noted otherwise.
8. When individual results are qualified in the body of a report, refer to the qualifier descriptions that follow.
9. Samples were analysed on an as received basis.
10. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sampling and Preservation Chart for Soils & Waters' for holding times. (Form LM-FOR-ADM-020)

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Acknowledgement.
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitablity qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

****NOTE**: pH duplicates are reported as a range NOT an RPD

Quality Control Results

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1120556 [Method Blank]							
3100 Metals in Soil - As Received							
Antimony	mg/kg	<2			< 2	T	
Arsenic	mg/kg	<2			< 2	T	
Barium	mg/kg	<2			< 2	T	
Beryllium	mg/kg	<2			< 2	T	
Boron	mg/kg	<2			< 2	T	
Cadmium	mg/kg	<2			< 2	T	
Chromium	mg/kg	<2			< 2	T	
Cobalt	mg/kg	<2			< 2	T	
Copper	mg/kg	<2			< 2	T	
Lead	mg/kg	<2			< 2	T	
Manganese	mg/kg	<2			< 2	T	
Molybdenum	mg/kg	<2			< 2	T	
Nickel	mg/kg	<2			< 2	T	
Selenium	mg/kg	<2			< 2	T	
Tin	mg/kg	<2			< 2	T	
Vanadium	mg/kg	<2			< 2	T	
Zinc	mg/kg	<2			< 2	T	
1120639 [Method Blank]							
3400 Mercury in Soil by FIMS							
Mercury	mg/kg	<0.01			< 0.01	T	

Laboratory: **EN_METALS**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1120557 [Laboratory Control Sample]							
3100 Metals in Soil - As Received			Expected Value	Percent Recovery			
Antimony	mg/kg	100	100.0	100	70-130 %	T	
Arsenic	mg/kg	95	100.0	95	70-130 %	T	
Barium	mg/kg	110	100.0	108	70-130 %	T	
Beryllium	mg/kg	97	100.0	97	70-130 %	T	
Boron	mg/kg	100	100.0	101	70-130 %	T	
Cadmium	mg/kg	91	100.0	91	70-130 %	T	
Chromium	mg/kg	100	100.0	102	70-130 %	T	
Cobalt	mg/kg	100	100.0	102	70-130 %	T	
Copper	mg/kg	96	100.0	96	70-130 %	T	
Lead	mg/kg	110	100.0	110	70-130 %	T	
Manganese	mg/kg	100	100.0	104	70-130 %	T	
Molybdenum	mg/kg	110	100.0	111	70-130 %	T	
Nickel	mg/kg	100	100.0	101	70-130 %	T	
Selenium	mg/kg	91	100.0	91	70-130 %	T	
Tin	mg/kg	91	100.0	91	70-130 %	T	
Vanadium	mg/kg	100	100.0	101	70-130 %	T	
Zinc	mg/kg	92	100.0	92	70-130 %	T	
1120640 [Laboratory Control Sample]							
3400 Mercury in Soil by FIMS			Expected Value	Percent Recovery			
Mercury	mg/kg	9.4	10.0	94	80-120 %	T	

Laboratory: **EN_SVOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1118606 [Method Blank]							
2000 TPH (C10 - C36) in Soil by GC							
C10-C14 Fraction	mg/kg	<10			< 10	T	
C15-C28 Fraction	mg/kg	<20			< 20	T	
C29-C36 Fraction	mg/kg	<20			< 20	T	
1118607 [Laboratory Control Sample]							
2000 TPH (C10 - C36) in Soil by GC			Expected Value	Percent Recovery			
C10-C14 Fraction	mg/kg	120	125.0	99	70-130 %	T	
C15-C28 Fraction	mg/kg	140	125.0	109	70-130 %	T	
C29-C36 Fraction	mg/kg	140	125.0	110	70-130 %	T	

Laboratory: **EN_VOC**

Sample, Test, Result Reference	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Codes
1118947 [Method Blank]							
1100 BTEX in Soil by P&T							
Benzene	mg/kg	<0.2			< 0.2	T	
C6-C9 Fraction	mg/kg	<5.0			< 5	T	
Ethylbenzene	mg/kg	<1.0			< 1	T	
Meta- & Para- Xylene	mg/kg	<2.0			< 2	T	
Ortho-Xylene	mg/kg	<1.0			< 1	T	
Toluene	mg/kg	<1.0			< 1	T	
Total Xylenes	mg/kg	<3.0			< 3	T	
4-Bromofluorobenzene - Surrogate	%	116			70-130 %	T	
1118948 [Laboratory Control Sample]							
1100 BTEX in Soil by P&T			Expected Value	Percent Recovery			
Benzene	mg/kg	4.6	5.0	93	70-130 %	T	
C6-C9 Fraction	mg/kg	44	50.0	88	70-130 %	T	
Ethylbenzene	mg/kg	4.7	5.0	94	70-130 %	T	
Meta- & Para- Xylene	mg/kg	9.7	10.0	97	70-130 %	T	
Ortho-Xylene	mg/kg	4.9	5.0	98	70-130 %	T	
Toluene	mg/kg	4.7	5.0	95	70-130 %	T	
Total Xylenes	mg/kg	15	N/A	N/A	N/A	N/A	
4-Bromofluorobenzene - Surrogate	%	112			70-130 %	T	

Sample Integrity

Attempt to Chill was evident	Yes
Samples correctly preserved	Yes
Organic samples had Teflon liners	Yes
Samples received with Zero Headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Alex Petridis	Senior Analyst - SVOC	
Ruth Callander	Client Services Officer	
Barry Blythman	Senior Analyst - VOC	Accreditation Number: 1645
Mark Herbstreit	Senior Analyst - Metals	Accreditation Number: 1645
Helen Lei	Senior Analyst - Waters	Accreditation Number: 1645
Olga Alieva	Analyst - SVOC	Accreditation Number: 1645

Laboratory Manager

Anthony Crane	Operations Manager	

Amended Report: Sample ID changed as per instruction from Christian Beasley - this report replaces report # 322450

- Indicates Not Requested * Indicates NATA accreditation does not cover the performance of this service

The samples were not collected by Amdel staff.

FACSIMILE

OTEK AUSTRALIA PTY LTD

Environmental Professionals

Attention: Dr Fouad Abo/ Ms Julie Hood

Company: GHD Pty Ltd

Fax No.: 03 8687 8111

From: Tom Santwyk-Anderson

Date: 5 June 2007

Pages: 100 (inc. Tables and Analytical Reports)

FAX Ref: 3106004CO3907.doc

RE: Werribee Fields – Imported Fill Material Stockpile Sample Results

Dear Fouad/ Julie,

Please find attached the results for validation samples obtained from the proposed imported fill material stockpiled at the Readymix Werribee Quarry located at Wests Road, Werribee (Lot 2 TP855710). A total of 22 validation samples were obtained from approximately 1,100 m^3 (rate of approx. 1:50 m^3) of soil that was excavated overburden clay from within the quarry.

Primary analytical laboratory testing was performed by Labmark Pty Limited (Labmark), which is located at South Melbourne, Victoria. Secondary laboratory testing was performed by ALS Pty Limited (ALS), of Springvale, Victoria. Labmark and ALS are certified by the National Association of Testing Authorities (NATA).

Quality Control sampling and analysis was conducted as part of OTEK's Quality Assurance/Quality Control (QA/QC) program in order to validate the integrity of field procedures and assess the accuracy and precision of laboratory analyses. As part of the QA/QC program duplicate (blind replicate samples) and triplicate (split samples) samples were analysed at a rate of one per ten in accordance with the NEPM (1999).

Samples to be submitted for analytical testing were collected in a new 250 mL glass jar, filled completely with no headspace and capped with a Teflon lined lid. The samples were uniquely labelled in accordance with the sample plan, placed on ice in an esky and transferred to the analytical laboratories using appropriate sample preservation procedures and chain of custody documentation. Additional soil samples were collected in resealable plastic bags for subsequent field screening using a photo ionisation detector (PID).

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A labelling system identifies the origin of each soil sample collected, e.g. IF-1. The label 'IF' refers to the material being imported fill and number '1' refers to the sample number Samples labelled IF/QS-# are duplicate samples analysed by the primary laboratory in order to determine the precision of the laboratory analyses and samples labelled IF/QS-#A are triplicate samples analysed by a second laboratory in order to determine the accuracy of the laboratory analyses. IF/TB-#' refers to trip blank samples which are analysed to determine the potential for cross contamination to have occurred during sampling and sample storage and transport.

The analytical program for the validation of the imported fill material was discussed with the environmental auditor and the analytical program listed below was agreed to via email on the 8th May 2007.

The analytical program can be summarised as follows:

- One sample per 50 m^3;
- One in 10 samples analysed for Full VIC EPA suite;
- All other samples analysed for metals, total petroleum hydrocarbons (TPH c_6-c_{36}), Organochlorine Pesticides (OCP), phenols, Polyaromatic Hydrocarbons (PAH); and
- One blind and one split sample per 20 samples obtained.

Analytical Results Summary – Stockpiled Imported Fill Material

22 validation samples were obtained from one stockpile containing approximately 1,100 m^3 of clay overburden material from the Readymix Werribee Quarry

- The results of the stockpile sampling program showed the concentrations of heavy metals in the individual samples to be below NEPM HILs 'A' for all metals (refer Table 3).
- The barium concentration in 1 of 22 individual samples exceeded the NEPM EIL of 300 mg/kg, with a maximum concentration of 360 mg/kg measured in sample IF-20 (Table 3). The standard deviation of the barium concentrations in the stockpiled material was 66 with a calculated 95% UCL of 211 mg/kg (Table 1). Also, the barium concentration recorded in sample IF-20 only exceeds the respective EIL by 20% and is within the NEPM background range for Australian soils of 100 to 3,000 mg/kg. Therefore, OTEK considers this acceptable for the intended use;
- The manganese concentration in 1 of 22 individual samples exceeded the NEPM EIL of 500 mg/kg, with a maximum concentration of 690 mg/kg measured in sample IF-5 (Table 3). The standard deviation of the manganese concentrations in the stockpiled material was 137 with a calculated 95% UCL of 241 mg/kg (Table 1). Also, the manganese concentration recorded in sample IF-5 only exceeds the respective EIL by 38% and is below the NEPM background range for Australian soils of 850 mg/kg. Therefore, OTEK considers this acceptable for the intended use; and

- The vanadium concentration in 6 of 20 individual samples exceeded the NEPM EIL of 50 mg/kg, with a maximum concentration of 150 mg/kg measured in sample IF-14 (Table 3). The standard deviation of the vanadium concentrations in the stockpiled material was 29 with a mean concentration of 53 mg/kg and a calculated 95% UCL of 64 mg/kg (Table 1). Although the vanadium concentration recorded in sample IF-14 exceeds the respective EIL by 200%, both the mean concentration and 95% UCL of vanadium in the material exceed the NEPM which suggests that the elevated vanadium concentrations are natural background levels. These vanadium concentrations are consistent with many basaltic clays located in the Newer Volcanic basalt regions west of Melbourne. The concentrations are also within the NEPM background range for Australian soils of 20 to 500 mg/kg. Therefore, OTEK considers this acceptable for the intended use.

A summary of this data (the EIL exceedences) follows on Table 1. Tables 2 through 23 summarise all of the data.

Table 1 – Stockpile Exceedence of EIL 95% UCLs

Metal	Maximum Concentration (mg/kg)	Median Concentration (mg/kg)	Minimum Concentration (mg/kg)	Number of Samples	Mean Concentration (mg/kg)	Standard Deviation	95% UCL[1] (mg/kg)	NEPM EIL (mg/kg)	NEPM Background Range (mg/kg)
Barium	360	160	100	22	187	66	211	300	100 - 3,000
Manganese	690	160	31	22	191	137	241	500	850
Vanadium	150	47	32	20	53	29	64	50	20 - 500

Note: [1] UCL = Upper Confidence Limit.
Shading indicates an exceedence of the EIL

- All other potential contaminants of concern measured are below the relevant criteria; and
- All 22 pH values recorded are slightly alkaline (range between 8.9 and 9.5), which is consistent with pH levels recorded in the natural basaltic clays associated with the Newer Volcanics in the region west of Melbourne (Table 16).

Use of Material

Due to only the marginal exceedence of EILs of barium, manganese and vanadium concentrations in six samples obtained from the stockpiled material at the Readymix Werribee Quarry, OTEK considers that the stockpiled material is suitable for use as imported fill for backfilling any part of the excavations located in Areas 3 and 4 of Melbourne Waters Riverwalk Project.

Analytical Results Summary – QA/QC Samples

The results of blind duplicate sampling indicated good agreement between the 4 primary and duplicate samples analysed (refer to Tables 19 to 23). Of the 134 RPD values calculated, 121 (or 90.3%) were reported to be within the ±50% acceptance range set by Australian Standard AS4482.1. RPD values were calculated where one of the values reported an analyte concentration below the laboratory detection limit by assuming the detection limit was the concentration obtained. However, where both samples in the duplicate pair reported analyte concentrations below the laboratory PQLs a qualitative assessment was made and the results considered acceptable for the purpose of the investigation.

OTEK considers that the small number of sample discrepancies may be attributable to low analyte concentrations reported near the limits of detection and sample heterogeneity. We note that the discrepancies between the recorded metal concentrations show that the duplicate sample concentrations are mainly less than those recorded in the primary samples.

Analytical Results Summary – Blank Samples

The analysis of the trip blank (IF/TB-1) obtained for the soil sampling program contained non-detectable concentrations of metals which indicating that significant cross contamination during transportation is not likely to have occurred (Table 18).

Analytical Results Summary – Laboratory QA/QC

Based on our evaluation of the QA/QC program, OTEK are of the opinion that the quality of the data is suitably reliant to conclude the results accurately reflecting the overall nature of the material.

Due to the use of new disposable gloves for sampling, decontamination of equipment was not required.

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Based on these results OTEK considers the stockpiled material suitable for backfill and await your opinion before proceeding with further actions.

If you have any questions please feel free to contact either of the undersigned on (03) 9525-5155.

Regards,

Tom Santwyk-Anderson
Environmental Project Manager

p.p.

Charles D. Barber
Director

Attachments:

Soil Analytical Summary Tables (22 pages)
Imported Fill – Analytical Reports (73 Pages)

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TABLE 2
STANDARD SAMPLE IDENTIFICATION
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Date
IF-1	23/05/2007
IF-2	23/05/2007
IF-3	23/05/2007
IF-4	23/05/2007
IF-5	23/05/2007
IF-6	23/05/2007
IF-7	23/05/2007
IF-8	23/05/2007
IF-9	23/05/2007
IF-10	23/05/2007
IF-11	23/05/2007
IF-12	23/05/2007
IF-13	23/05/2007
IF-14	23/05/2007
IF-15	23/05/2007
IF-16	23/05/2007
IF-17	23/05/2007
IF-18	23/05/2007
IF-19	23/05/2007
IF-20	23/05/2007
IF-21	23/05/2007
IF-22	23/05/2007
IF/TB-1	23/05/2007
IF/QS-1 (Duplicate of IF-5)	23/05/2007
IF/QS-1A (Triplicate of IF-5)	23/05/2007
IF/QS-2 (Duplicate of IF-20)	23/05/2007
IF/QS-2A (Triplicateof IF-20)	23/05/2007

TABLE 3
SOIL ANALYTICAL SUMMARY
METALS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc	Mercury
		Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Sn	V	Zn	Hg
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<1	1	140	<1	7	<0.1	16	16	7	9	170	<1	11	<2	<1	-	7	<0.05
IF-2	23-May-07	<1	1	140	<1	6	<0.1	14	10	6	9	160	<1	9	<2	<1	35	5	<0.05
IF-3	23-May-07	<1	2	180	<1	7	<0.1	18	16	8	10	250	<1	14	<2	<1	49	6	<0.05
IF-4	23-May-07	<1	1	250	<1	8	<0.1	16	11	7	9	140	<1	9	<2	<1	46	6	<0.05
IF-5	23-May-07	<1	9	170	<1	7	<0.1	27	45	19	10	690	<1	40	<2	<1	120	11	<0.05
IF-6	23-May-07	<1	<1	150	<1	8	<0.1	15	16	6	9	130	<1	8	<2	<1	38	5	<0.05
IF-7	23-May-07	<1	2	160	<1	7	<0.1	15	10	6	9	77	<1	11	<2	<1	51	<5	<0.05
IF-8	23-May-07	<1	2	130	<1	6	<0.1	18	16	8	9	180	<1	16	<2	<1	48	6	<0.05
IF-9	23-May-07	<1	1	160	<1	7	<0.1	18	12	9	8	160	<1	11	<2	<1	51	6	<0.05
IF-10	23-May-07	<1	2	100	<1	6	<0.1	16	11	8	8	140	<1	9	<2	2	-	6	<0.05
IF-11	23-May-07	<1	1	140	<1	6	<0.1	18	23	7	9	110	<1	14	<2	<1	43	6	<0.05
IF-12	23-May-07	<1	1	260	<1	6	<0.1	18	16	7	9	160	<1	15	<2	<1	42	6	<0.05
IF-13	23-May-07	<1	<1	140	<1	6	<0.1	18	19	7	9	320	<1	12	<2	<1	39	6	<0.05
IF-14	23-May-07	<1	12	290	<1	8	<0.1	36	32	17	10	320	<1	33	<2	<1	150	10	<0.05
IF-15	23-May-07	<1	<1	140	<1	8	<0.1	17	10	6	8	96	<1	8	<2	<1	36	6	<0.05
IF-16	23-May-07	<1	<1	160	<1	7	<0.1	15	9	5	7	50	<1	5	<2	<1	32	5	<0.05
IF-17	23-May-07	<1	<1	210	<1	7	<0.1	22	13	6	9	150	<1	11	<2	<1	36	7	<0.05
IF-18	23-May-07	<1	2	190	<1	7	<0.1	21	28	10	12	220	<1	14	<2	<1	57	7	<0.05
IF-19	23-May-07	<1	<1	300	<1	5	<0.1	18	12	6	9	290	<1	11	<2	<1	37	5	<0.05
IF-20	23-May-07	<1	2	360	<1	8	<0.1	22	18	8	10	240	<1	14	<2	<1	55	8	<0.05
IF-21	23-May-07	<1	1	130	<1	7	<0.1	18	8	7	9	31	<1	8	<2	<1	48	6	<0.05
IF-22	23-May-07	<1	1	210	<1	7	<0.1	20	10	7	9	120	<1	11	<2	<1	49	7	<0.05
NEPM EILs		*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	*	60	*	*	50	200	1
NEPM "A" HILs - Residential		*	100	*	20	3000	20	100 (CrVI) 12% (CrIII)	100	1,000	300	1,500	*	600	*	*	*	7,000	15
ANZECC 1992 Environmental Criteria		20	20	*	*	*	3	50	*	60	300	500	*	60	*	50	60	200	1
NEPM Background ranges		4-44^	1-50	100-3,000	*	*	1	5-1,000	1-40	2-100	2-200	850	*	5-500	*	1-25^	20-500	10-300	0.03
Practical Quantitation Limits (Labmark)		1	1	5	1	5	0.1	1	1	2	2	5	1	1	2	1	5	5	0.05
Laboratory Methodology (Labmark)		E022.2																	E026.2

Notes: "*" Criterion not specified.
"^" ANZECC 1992 Background Range given in absence of NEPM Background Range.
Light grey shading indicates concentrations above NEPM EILs (divided by two)
Dark grey shading indicates concentrations above NEPM "A" HILs (divided by two)

TABLE 4
SOIL ANALYTICAL SUMMARY
BTEX & TPH
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	BTEX				TPH			
		Benzene	Toluene	Ethyl-Benzene	Total Xylenes	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100
IF-2	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-3	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-4	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-5	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-6	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-7	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-8	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-9	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-10	23-May-07	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100
IF-11	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-12	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-13	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-14	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-15	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-16	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-17	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-18	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-19	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-20	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-21	23-May-07	-	-	-	-	<10	<50	<100	<100
IF-22	23-May-07	-	-	-	-	<10	<50	<100	<100
NSW EPA Criteria (1)		1	1.4	3.1	14	65	1,000		
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	1.5	2	50	100	100
Laboratory Methodology (Labmark)		EP080				EP080/071			

Notes: "*" Criterion not specified.

(1) New South Wales Environment Protection Authority (NSW EPA) threshold criteria for the assessment of service station sites. Levels at or below these thresholds indicate suitability for sensitive land use (NSW EPA, 1994).

"-" Sample not analysed.

TABLE 5
SOIL ANALYTICAL SUMMARY
SEMIVOLATILE CHLORINATED HYDROCARBONS (sVCH)
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	1,3-dichlorobenzene (mg/kg)	1,4-dichlorobenzene (mg/kg)	1,2-dichlorobenzene (mg/kg)	Hexachloroethane (mg/kg)	1,2,4-trichlorobenzene (mg/kg)	Hexachloropropene (mg/kg)	Hexachlorobutadiene (mg/kg)	Hexachlorocyclopentadiene (mg/kg)	Pentachlorobenzene (mg/kg)	Hexachlorobenzene (mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5
NEPM EILs		*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits		0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5	0.5
Laboratory Methodology		E017.2									

Notes: "<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
"-" = Sample not analysed.

TABLE 6
SOIL ANALYTICAL SUMMARY
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)															
		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)Anthracene	Chrysene	Benzo(b+k)Fluoranthene	Benzo(a)Pyrene	Indeno(1,2,3,-cd)Pyrene	DiBenzo(a,h)Anthracene	Benzo(g,h,i)Perylene	Total PAH
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-2	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-3	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-4	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-5	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-6	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-7	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-8	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-9	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-11	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-12	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-13	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-14	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-15	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-16	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-17	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-18	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-19	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-20	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-21	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
IF-22	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	-
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*	*	*	1	*	*	*	20
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5	-
Laboratory Methodology (Labmark)		E007.2															

Notes: "<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.

TABLE 7
SOIL ANALYTICAL SUMMARY
PHENOLS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	PHENOLIC GROUPS										
		Phenol	2-chlorophenol	2-methylphenol	3-&4-methylphenol	2-nitrophenol	2,4-dimethylphenol	2,4-dichlorophenol	4-chloro-3-methylphenol	2,4,6-trichlorophenol	2,4,5-trichlorophenol	Pentachlorophenol
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-2	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-3	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-4	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-5	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-6	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-7	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-8	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-9	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-11	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-12	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-13	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-14	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-15	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-16	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-17	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-18	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-19	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-20	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-21	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
IF-22	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		8,500	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	-	0.5	0.5	0.5	0.5	-	0.5	0.5
Laboratory Methodology (Labmark)		E008.2										

Notes: "<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
IS = insufficient sample was supplied for analysis

TABLE 8
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - VAC
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	VOLATILE AROMATIC COMPOUNDS (VAC)														
		Benzene	Toluene	Ethylbenzene	m- & p-xylene	o-xylene	Styrene	Isopropylbenzene	n-propylbenzene	1,3,5-trimethylbenzene	sec-butylbenzene	1,2,4-trimethylbenzene	tert-butylbenzene	p-isopropyltoluene	n-butylbenzene	Naphthalene
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-10	23-May-07	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)		E016.2														

Notes: "*" Criterion not specified.

TABLE 9
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - OXYGENATED COMPOUNDS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	OXYGENATED COMPOUNDS		
		Vinyl acetate	Ethyl acetate	Tributylmethylether (TBME)
		(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<5	<0.5	<0.5
IF-10	23-May-07	<5	<0.5	<0.5
NEPM EILs		*	*	*
NEPM "A" HILs - Residential		*	*	*
Practical Quantitation Limits (Labmark)		5	0.5	0.5
Laboratory Methodology (Labmark)		E016.2		

Notes: "*" Criterion not specified.

TABLE 10
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - SULPHONATED COMPOUNDS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	SULPHONATED COMPOUNDS
		Carbon disulfide
		(mg/kg)
IF-1	23-May-07	<0.5
IF-10	23-May-07	<0.5
NEPM EILs		*
NEPM "A" HILs - Residential		*
Practical Quantitation Limits (Labmark)		0.5
Laboratory Methodology (Labmark)		E016.2

Notes: "*" Criterion not specified.

TABLE 11
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - HALOGENATED ALIPHATICS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	HALOGENATED ALIPHATICS																																		
		Dichlorodifluoromethane	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane	1,1-dichloroethene	trans-1,2-dichloroethene	1,1-dichloroethane	cis-1,2-dichloroethene	2,2-dichloropropane	Chloroform	1,1,1-trichloroethane	1,2-dichloroethane	1,1-dichloropropene	Carbon tetrachloride	Trichloroethene	1,2-dichloropropane	Dibromomethane	Bromodichloromethane	cis-1,3-dichloropropene	trans-1,3-dichloropropene	1,1,2-trichloroethane	1,3-dichloropropane	Chlorodibromomethane	Tetrachloroethene	1,2-dibromoethane	1,1,1,2-tetrachloroethane	Bromoform	1,1,2,2-tetrachloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	Hexachlorobutadiene
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-10	23-May-07	<5	<5	<5	<5	<5	<5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)		5	5	5	5	5	5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)		E016.2																																		

Notes: "*" Criterion not specified.

TABLE 12
SOIL ANALYTICAL SUMMARY
VOLATILE ORGANIC COMPOUNDS - HALOGENATED AROMATICS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	HALOGENATED AROMATICS								
		Chlorobenzene	Bromobenzene	2-chlorotoluene	4-chlorotoluene	1,3-dichlorobenzene	1,4-dichlorobenzene	1,2-dichlorobenzene	1,2,4-trichlorobenzene	1,2,3-trichlorobenzene
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
NEPM EILs		*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)		E016.2								

Notes: "*" Criterion not specified.

TABLE 13
SOIL ANALYTICAL SUMMARY
ORGANOCHLORINE PESTICIDES (OCPs)
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	ORGANOCHLORINE PESTICIDES (OCPs)																		
		α–BHC	Hexachlorobenzene	β–BHC	γ–BHC (Lindane)	δ-BHC	Heptachlor	Aldrin	Heptachlor epoxide	trans-chlordane	Endosulfan I	cis-chlordane	Dieldrin	4,4–DDE	Endrin	Endosulfan II	4,4-DDD	Endosulfan sulphate	4,4-DDT	Methoxychlor
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-2	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-3	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-4	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-5	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-6	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-7	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-8	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-9	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-10	23-May-07	<0.05	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-11	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-12	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-13	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-14	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-15	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-16	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-17	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-18	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-19	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-20	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-21	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
IF-22	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.2
NEPM EILs		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	10	10(1)	*	50(2)	*	50(2)	10(1)	200(3)	*	*	200(3)	*	200(3)	*
Practical Quantitation Limits (Labmark)		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2
Laboratory Methodology (Labmark)		E013.2																		

Notes: "<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
"-" = Sample not analysed
(1) This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.
(2) This criterion applies to the sum of the determined concentrations of Chlordane-Trans and Chlordane-Cis.
(3) This criterion applies to the sum of the determined concentrations of DDD, DDE and DDT.

TABLE 14
SOIL ANALYTICAL SUMMARY
POLYCHLORINATED BIPHENYLS (PCB)
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	POLYCHLORINATED BIPHENYLS (PCB)						
		Arochlor 1016	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Total PCB
		(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-1	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
IF-10	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
NEPM EILs		*	*	*	*	*	*	*
NEPM "A" HILs - Residential		*	*	*	*	*	*	10
Practical Quantitation Limits (Labmark)		0.5	0.5	0.5	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)		E013.2						

Notes: "<##" = below laboratory practical quantitation limits

"-" = sample not analysed

TABLE 15
SOIL ANALYTICAL SUMMARY
FLUORIDE AND TOTAL CYANIDE
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	Fluoride	Cyanide Total
		(mg/kg)	(mg/kg)
IF-1	23-May-07	17	<1
IF-10	23-May-07	18	<1
Draft EPAV Criteria (1)		450	50
NEPM "A" HILs - Residential		*	500 (Complexed)
			250 (Free)
Practical Quantitation Limits (LabMark)		1	1
Laboratory Methodology (LabMark)		E034.2	E040.2

Notes: (1) Draft Victorian Environment Protection Authority (EPAV) Publication 448.2 Classification of Wastes, February 2007.

"<##" denotes the concentration of the analyte was below the laboratory practical quantitation limits.

"*" Criterion not specified.

Shading indicates sample outside criteria.

TABLE 16
SOIL ANALYTICAL SUMMARY
pH
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	pH
IF-1	23/05/2007	8.9
IF-2	23/05/2007	8.9
IF-3	23/05/2007	9.1
IF-4	23/05/2007	9.3
IF-5	23/05/2007	9.2
IF-6	23/05/2007	9.1
IF-7	23/05/2007	9.3
IF-8	23/05/2007	9.3
IF-9	23/05/2007	9.2
IF-10	23/05/2007	9.3
IF-11	23/05/2007	9.4
IF-12	23/05/2007	9.3
IF-13	23/05/2007	9.2
IF-14	23/05/2007	9.3
IF-15	23/05/2007	9.2
IF-16	23/05/2007	9.3
IF-17	23/05/2007	9.5
IF-18	23/05/2007	9.4
IF-19	23/05/2007	9.4
IF-20	23/05/2007	9.3
IF-21	23/05/2007	9.1
IF-22	23/05/2007	9.3
ANZECC 1992 Background		6-8
Practical Quantitation Limits (Labmark)		0.1
Laboratory Methodology (Labmark)		E3600

Notes: Shading indicates concentrations outside the ANZECC 1992 Background range.

TABLE 17
SOIL ANALYTICAL SUMMARY
PID READINGS
IMPORTED FILL - STOCKPILE SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Date	PID Reading
		(ppm)
IF-1	23/05/2007	0.2
IF-2	23/05/2007	1.0
IF-3	23/05/2007	0.5
IF-4	23/05/2007	3.1
IF-5	23/05/2007	0.8
IF-6	23/05/2007	1.6
IF-7	23/05/2007	1.4
IF-8	23/05/2007	0.0
IF-9	23/05/2007	0.5
IF-10	23/05/2007	0.3
IF-11	23/05/2007	1.0
IF-12	23/05/2007	1.1
IF-13	23/05/2007	0.7
IF-14	23/05/2007	0.3
IF-15	23/05/2007	1.4
IF-16	23/05/2007	2.5
IF-17	23/05/2007	0.1
IF-18	23/05/2007	0.8
IF-19	23/05/2007	1.5
IF-20	23/05/2007	1.8
IF-21	23/05/2007	0.6
IF-22	23/05/2007	0.4

TABLE 18
TRIP BLANK SAMPLE ANALYTICAL SUMMARY
METALS
IMPORTED FILL - BLANK SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Date	Antimony Sb (µg/L)	Arsenic As (µg/L)	Barium Ba (µg/L)	Beryllium Be (µg/L)	Boron B (µg/L)	Cadmium Cd (µg/L)	Chromium Cr (µg/L)	Cobalt Co (µg/L)	Copper Cu (µg/L)	Lead Pb (µg/L)	Manganese Mn (µg/L)	Molybdenum Mo (µg/L)	Nickel Ni (µg/L)	Selenium Se (µg/L)	Tin Sn (µg/L)	Vanadium V (µg/L)	Zinc Zn (µg/L)	Mercury Hg (µg/L)
IF/TB-1	23-May-07	<5	<5	<5	<1	<10	<0.5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5	<0.1
Practical Quantitation Limits (Labmark)		5	5	5	1	10	0.5	5	5	5	5	5	5	5	5	5	10	5	0.1
Laboratory Methodology (Labmark)		E022.1/E030.1																	E026.1

Notes: "<##" = below laboratory practical quantitation limits.
"*" = criterion not specified.
Shading indicates concentrations above laboratory practical quantitation limits.

TABLE 18
SOIL ANALYTICAL SUMMARY
IMPORTED FILL - SUMMARY OF QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Quality Sample Identification	Quality Sample Duplicate Identification	Quality Sample Triplicate Identification
IF-5	IF/QS-1	IF/QS-1A
IF20	IF/QS-2	IF/QS-2A

TABLE 19

SOIL ANALYTICAL SUMMARY
METALS
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Depth (m)	Sample Date	Antimony	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Cobalt	Copper	Lead	Manganese	Molybdenum	Nickel	Selenium	Tin	Vanadium	Zinc	Mercury
			Sb	As	Ba	Be	B	Cd	Cr	Co	Cu	Pb	Mn	Mo	Ni	Se	Sn	V	Zn	Hg
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-5	-	23-May-07	<1	9	170	<1	7	<0.1	27	45	19	10	690	<1	40	<2	<1	120	11	<0.05
IF/QS-1			<1	1	200	<1	<5	<0.1	20	17	8	9	170	<1	10	<2	<1	52	7	<0.05
Relative Percentage Difference (RPD)			**<50%**	**160%**	**16%**	**<50%**	**>33%**	**<50%**	**30%**	**90%**	**81%**	**11%**	**121%**	**<50%**	**120%**	**<50%**	**<50%**	**79%**	**44%**	**<50%**
IF/QS-1A			<5	<5	240	<1	50	<1	28	7	7	9	91	<2	14	<5	<5	29	8	<0.1
Relative Percentage Difference (RPD)			**<50%**	**>57%**	**34%**	**<50%**	**151%**	**<50%**	**4%**	**146%**	**92%**	**11%**	**153%**	**<50%**	**96%**	**<50%**	**<50%**	**122%**	**32%**	**<50%**
NEPM EILs			*	20	300	*	*	3	1 (CrVI) 400 (CrIII)	*	100	600	500	*	60	*	*	60	200	1
NEPM "A" HILs - Residential			*	100	*	20	3000	20	100 (CrVI) 12% (CrIII)	100	1,000	300	1500	*	600	*	*	*	7,000	15
ANZECC 1992 Environmental Criteria			20	20	*	*	*	3	50	*	60	300	*	*	*	*	50	60	200	1
NEPM Background ranges			4-44^	1-50	100-300	*	*	1	5-1000	1-40	2-100	2-200	850	*	5-500	*	1-25^	5-500	10-300	0.03
Practical Quantitation Limits (Labmark)			1	1	5	1	5	0.1	1	1	2	2	5	1	1	2	1	5	5	0.05
Laboratory Methodology				E5910																E5950
Practical Quantitation Limits (ALS)			5	5	10	1	50	1	2	2	5	5	5	2	2	5	5	5	5	0.1
Laboratory Methodology (ALS)											EG005T									EG035T

Notes: "*" Criterion not specified.
"^" ANZECC 1992 Background Range given in absence of NEPM Background Range.
Light grey shading indicates concentrations above NEPM EILs (divided by two)
Dark grey shading indicates concentrations above NEPM "A" HILs (divided by two

TABLE 20
SOIL ANALYTICAL SUMMARY
BTEX & TPH
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Depth	Sample Date	BTEX				TPH			
			Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Total Xylenes (mg/kg)	C_6-C_9 (mg/kg)	C_{10}-C_{14} (mg/kg)	C_{15}-C_{28} (mg/kg)	C_{29}-C_{36} (mg/kg)
IF-5	-	23-May-07	-	-	-	-	<10	<50	<100	<100
IF/QS-1			-	-	-	-	<10	<50	<100	<100
Relative Percentage Difference (RPD)			**-**	**-**	**-**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
IF/QS-1A							<10	<50	<100	<100
Relative Percentage Difference (RPD)			**-**	**-**	**-**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
NSW EPA Criteria (1)			1	1.4	3.1	14	65	1,000		
Practical Quantitation Limits (Labmark)			0.2	1	1	3	10	50	100	100
Laboratory Methodology (Labmark)			E1010				E1230	E1221		
Practical Quantitation Limits (ALS)			0.2	1	1	4	10	50	100	100
Laboratory Methodology (ALS)			E1010				EP080	EP071		

Notes:

"*" = criterion not specified.
"**" sample not analysed due to laboratory error
"<##" = below laboratory practical quantitation limits
"-" denotes sample not analysed.
Shading indicates RPD values >50%.

TABLE 21
SOIL ANALYTICAL SUMMARY
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Depth (m)	Sample Date	POLYCYCLIC AROMATIC HYDROCARBONS															
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)Anthracene	Chrysene	Benzo(b+k)Fluoranthene	Benzo(a)Pyrene	Indeno(1,2,3,-cd)Pyrene	DiBenzo(a,h)Anthracene	Benzo(g,h,i)Perylene
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-5	-	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
IF/QS-1			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
IF/QS-1A			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	*	*	*	*	*	*	1	*	*	*
Practical Quantitation Limits (Labmark)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5
Laboratory Methodology (Labmark)			E007.2														
Practical Quantitation Limits (ALS)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5
Laboratory Methodology (ALS)			EP075(SIM)B														

Notes:

"<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
"-" denotes sample not analysed.
Shading indicates RPD values >50%.

TABLE 22
SOIL ANALYTICAL SUMMARY
PHENOLS
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample Identification	Sample Depth (m)	Sample Date	PHENOLIC GROUPS											
			Phenol	2-chlorophenol	2-methylphenol	3-&4-methylphenol	2-nitrophenol	2,4-dimethylphenol	2,4-dichlorophenol	2,6-Dichlorophenol	4-chloro-3-methylphenol	2,4,6-trichlorophenol	2,4,5-trichlorophenol	Pentachlorophenol
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-20	-	23-May-07	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1
IF/QS-2			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<1
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
IF/QS-2A			<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<2
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**<50%**	**<50%**	**<50%**	**<50%**
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			8,500	*	*	*	*	*	*	*	*	*	*	*
Practical Quantitation Limits (Labmark)			0.5	0.5	0.5	0.5	0.5	0.5	0.5	-	0.5	0.5	0.5	1.0
Laboratory Methodology (Labmark)			E008.2											
Practical Quantitation Limits (ALS)			0.5	0.5	0.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2.0
Laboratory Methodology (ALS)			EP075(SIM)A											

Notes:
"<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
"-" denotes sample not analysed.
Shading indicates RPD values >50%.

TABLE 23
SOIL ANALYTICAL SUMMARY
ORGANOCHLORINE PESTICIDES (OCPs)
IMPORTED FILL - QA/QC SAMPLES
MELBOURNE WATER, WERRIBEE, VICTORIA

Sample ID	Sample Depth (m)	Sample Date	a--BHC	Hexachlorobenzene	b--BHC	g--BHC (Lindane)	d-BHC	Heptachlor	Aldrin	Heptachlor epoxide	trans-chlordane	Endosulfan I	cis-chlordane	Dieldrin	4,4--DDE	Endrin	Endosulfan II	4,4-DDD	Endosulfan sulphate	4,4-DDT	Endrin ketone	Endrin aldehyde	Methoxychlor
			(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
IF-20	-	23-May-07	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.2
IF/QS-2			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	<0.2
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**-**	**<50%**
IF/QS-2A			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.2	<0.05	<0.05	<0.2
Relative Percentage Difference (RPD)			**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**<50%**	**-**	**-**	**<50%**
NEPM EILs			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
NEPM "A" HILs - Residential			*	*	*	*	*	10	10(1)	10(1)	*	50(2)	50(2)	*	*	*	*	200(3)	200(3)	200(3)	*	*	*
Practical Quantitation Limits (Labmark)			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	-	-	-	0.05
Laboratory Methodology (Labmark)			E013.2																				
Practical Quantitation Limits (ALS)			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Laboratory Methodology (ALS)			EP068A																				

Notes:

"<##" = concentration below laboratory practical quantitation limits.
"*" = criterion not specified.
(1) This criterion applies to the sum of the determined concentrations of Aldrin and Dieldrin.
(2) This criterion applies to the sum of the determined concentrations of Chlordane-Trans and Chlordane-Cis.
(3) This criterion applies to the sum of the determined concentrations of DDD, DDE and DDT.

CUSTOMER CENTRIC - ANALYTICAL CHEMISTS

No. 13542.

Accredited for compliance with ISO/IEC 17025. The results of tests, calibrations and/or measurements included in this document are traceable to Australian/national standards. NATA is a signatory to the APLAC mutual recognition arrangement for the mutual recognition of the equivalence of testing, calibration and inspection reports.

AUSTRALIAN QUARANTINE AND INSPECTION SERVICE

SYDNEY License No. N0356.

Quarantine Approved premises criteria 5.1 for quarantine containment level 1 (QCI) facilities. Class five criteria cover premises utilised for research, analysis,and/or testing of biological material, soil, animal, plant and human products.

FINAL CERTIFICATE OF ANALYSIS - ENVIRONMENTAL DIVISION

Laboratory Report No:	E032113
Client Name:	OTEK Australia Pty Ltd
Client Reference:	Werribee Area 4
Contact Name:	Tom Santwyk-Anderson
Chain of Custody No:	na
Sample Matrix:	SOIL & WATER

Cover Page 1 of 4
plus Sample Results

Date Received: 23/05/2007
Date Reported: 31/05/2007

This Final Certificate of Analysis consists of sample results, DQI's, method descriptions, laboratory definitions, and internationally recognised NATA accreditation and endorsement. The DQO compliance relates specifically to QA/QC results as performed as part of the sample analysis, and may provide an indication of sample result quality. Transfer of report ownership from Labmark to the client shall only occur once full & final payment has been settled and verified. All report copies may be retracted where full payment has not occured within the agreed settlement period.

QUALITY ASSURANCE CRITERIA

Accuracy:	matrix spike:	1 in first 5-20, then 1 every 20 samples
	lcs, crm, method:	1 per analytical batch
	surrogate spike:	addition per target organic method
Precision:	laboratory duplicate:	1 in first 5-10, then 1 every 10 samples
	laboratory triplicate:	re-extracted & reported when duplicate RPD values exceed acceptance criteria
Holding Times:	soils, waters:	Refer to LabMark Preservation & THT table VOC's 14 days water / soil VAC's 7 days water or 14 days acidified VAC's 14 days soil SVOC's 7 days water, 14 days soil Pesticides 7 days water, 14 days soil Metals 6 months general elements Mercury 28 days
Confirmation:	target organic analysis:	GC/MS, or confirmatory column
Sensitivity:	EQL:	Typically 2-5 x Method Detection Limit (MDL)

QUALITY CONTROL GLOBAL ACCEPTANCE CRITERIA (GAC)

Accuracy:	spike, lcs, crm surrogate:	general analytes 70% - 130% recovery phenol analytes 50% - 130% recovery organophosphorous pesticide analytes 60% - 130% recovery phenoxy acid herbicides 50% - 130% recovery
	anion/cation bal:	+/- 10% (0-3 meq/l), +/- 5% (>3 meq/l)
Precision:	method blank:	not detected >95% of the reported EQL
	duplicate lab RPD (metals):	0-30% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)
	duplicate lab RPD:	0-50% (>10xEQL), 0-75% (5-10xEQL) 0-100% (<5xEQL)

QUALITY CONTROL ANALYTE SPECIFIC ACCEPTANCE CRITERIA (ASAC)

Accuracy:	spike, lcs, crm surrogate:	analyte specific recovery data <3xsd of historical mean
Uncertainty:	spike, lcs:	measurement calculated from historical analyte specific control charts

RESULT ANNOTATION

DQO:	Data Quality Objective	s:	matrix spike recovery	p:	pending
DQI:	Data Quality Indicator	d:	laboratory duplicate	lcs:	laboratory control sample
EQL:	Estimated Quantitation Limit	t:	laboratory triplicate	crm:	certified reference material
- - :	not applicable	r:	RPD relative % difference	mb:	method blank

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This document is issued in accordance with NATA's accreditation requirements.

NEPC GUIDELINE COMPLIANCE - DQO

1. GENERAL

A. Results relate specifically to samples as received. Sample results are not corrected for matrix spike, lcs, or surrogate recovery data.

B. EQL's are matrix dependant and may be increased due to sample dilution or matrix interference.

C. Laboratory QA/QC samples are specific to this project.

D. Inter-laboratory proficiency results are available upon request. NATA accreditation details available at www.nata.asn.au.

E. VOC spikes & surrogates added to samples during extraction, SVOC spikes & surrogates added prior to extraction.

F. Recovery data outside GAC limits shall be investigated and compared to ASAC (historical mean +/- 3sd). If recovery data <20%, then the relevant results for that compound are considered not reliable.

G. Recovery data (ms, surrogate, crm, lcs) outside ASAC limits shall initiate an investigative action. Anomolous QC data is examined in conjunction with other QC samples and a final decision whether to accept or reject results is provided by the professional judgement of the senior analyst. The USEPA-CLP National Functional Guidelines are referred to for specific recommendations.

H. Extraction (preparation) date refers to the date that sample preparation was initiated. Note that certain methods not requiring sample preparation (eg. VOCs in water, etc) may report a common extraction and analysis date.

I. LabMark shall maintain an official copy of this Certificate of Analysis for all tracable reference purposes.

2. CHAIN OF CUSTODY (COC) & SAMPLE RECEIPT NOTICE (SRN) REQUIREMENTS

A. SRN issued to client upon sample receipt & login verification.

B. Preservation & sampling date details specified on COC and SRN, unless noted.

C. Sample Integrity & Validated Time of Sample Receipt (VTSR) Holding Times verified (preservation may extend holding time, refer to preservation chart).

3. NATA ACCREDITED METHODS

A. NATA accreditation held for each method and sample matrix type reported, unless noted below.

B. NATA accredited in-house laboratory methods are referenced from NEPC, ASTM, modified USEPA / APHA documents. Corporate Accreditation No. 13542.

C. Subcontracted analyses: Refer to Sample Receipt Notice and additional DQO comments.

LabMark PTY LTD ABN 27 079 798 397
* SYDNEY: Unit 1, 8 Leighton Place Asquith NSW 2077 * MELBOURNE: 116 Moray Street, South Melbourne VIC 3205
* Telephone: (02) 9476 6533 * Fax: (02) 9476 8219 * Telephone: (03) 9686 8344 * Fax: (03) 9686 7344

4. QA/QC FREQUENCY COMPLIANCE TABLE SPECIFIC TO THIS REPORT

Matrix: **SOIL**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
1	Fluoride	2	0	0%	0	0	0%
2	Total Cyanide	2	0	0%	0	0	0%
3	Petroleum Hydrocarbons (TPH)	23	3	13%	0	2	9%
7	Volatile TPH by P&T (vTPH)	23	3	13%	0	2	9%
9	Polyaromatic Hydrocarbons (PAH)	23	3	13%	0	2	9%
13	Phenols by GC/MS	23	3	13%	0	2	9%
17	Volatile Organic Compounds (VOC)	2	0	0%	0	0	0%
20	Organochlorine Pesticides (OC)	23	3	13%	0	2	9%
24	Polychlorinated Biphenyls (PCB)	2	0	0%	0	0	0%
25	Semivolatile Chlorinated Hydrocarbons	2	0	0%	0	0	0%
27	Acid extractable mercury	23	3	13%	0	2	9%
30	Acid extractable metals	23	3	13%	0	2	9%
34	pH in soil	22	3	14%	0	0	0%
36	Moisture	24	--	--	--	--	--

Matrix: **WATER**

Page:	Method:	Totals:	#d	%d-ratio	#t	#s	%s-ratio
26	Unfiltered metals	1	0	0%	0	0	0%
29	Unfiltered metals	1	0	0%	0	0	0%

GLOSSARY:

#d	number of discrete duplicate extractions/analyses performed.
%d-ratio	NEPC guideline for laboratory duplicates is 1 in 10 samples (min 10%).
#t	number of triplicate extractions/analyses performed.
#s	number of spiked samples analysed.
%s-ratio	USEPA guideline for laboratory matrix spikes is 1 in 20 samples (min 5%).

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5. ADDITIONAL COMMENTS SPECIFIC TO THIS REPORT

A. All tests were conducted by LabMark Environmental Melbourne, NATA accreditation No. 13542, Corporate Site No. 15897., unless indicated below.
B. The following tests were conducted by LabMark Environmental Sydney, NATA accreditation No. 13542, Corporate Site No. 13535. :- Fluoride, Total Cyanide
C. Matrix spike recovery Method No:- E022.2 Lab-ID 90226(METALS - Antimony) reported 61%R, lcs reported 94%R.
D. Matrix spike recovery Method No:- E022.2 Lab-ID 90226(METALS - Arsenic) reported 69%R, lcs reported 97%R.
E. Matrix spike recovery Method No:- E022.2 Lab-ID 90226(METALS - Selenium) reported 48%R, lcs reported 95%R.
F. Matrix spike recovery Method No:- E022.2 Lab-ID 90225(METALS - Selenium) reported 61%R, lcs reported 95%R.
G. Matrix spike recovery Method No:- E022.2 Lab-ID 90225(METALS - Nickel) reported 135%R, lcs reported 98%R.
H. Matrix spike recovery Method No:- E022.2 Lab-ID 90225(METALS - Cobolt) reported 148%R, lcs reported 103%R.

Laboratory QA/QC data shall relate specifically to this report, and may provide an indication of site specific sample result quality. LabMark DOES NOT report NON-RELEVANT BATCH QA/QC data. Acceptance of this self assessment certificate does not preclude any requirement for a QA/QC review by a accredited contaminated site EPA auditor, when and wherever necessary. Laboratory QA/QC self assessment references available upon request.

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Laboratory Report No: E032113
Client Name: OTEK Australia Pty Ltd
Contact Name: Tom Santwyk-Anderson
Client Reference Werribee Area 4 3106004

Date: 31/05/07
This report supercedes reports issued on: 30/05/07

Final
Certificate
of Analysis

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		30/5/07	30/5/07	28/5/07	28/5/07						
Method : E034.2/E045.2											
Fluoride	**EQL**										
Fluoride	1	17	18	79%	<1						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E034.2/E045.2: 1:5 water extraction. Determined by FIA-Ion Selective Electrode and/or by Ion Chromatography.

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		30/5/07	30/5/07	25/5/07	25/5/07						
Method : E040.2/E054.2											
Total Cyanide	**EQL**										
Total Cyanide	1	<1	<1	116%	<1						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E040.2/E054.2: Caustic extract followed by strong acid distillion. Analysis by colour.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Final
Certificate of Analysis

Laboratory Identification		90231	90232	90233	90234	90235	90236	90237	90238	90239	90240
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**90241**	**90242**	**90243**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	<50	<50	<50	<50	--	<50	--	<50	--	--
C15 - C28 Fraction	100	<100	<100	<100	<100	--	<100	--	<100	--	87%
C29 - C36 Fraction	100	<100	<100	<100	<100	--	<100	--	<100	--	--
Sum of TPH C10 - C36	--	--	--	--	--	--	--	--	--	--	--

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**90226s**	**lcs**	**mb**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07							
Method : E006.2											
Petroleum Hydrocarbons (TPH)	**EQL**										
C10 - C14 Fraction	50	--	--	<50							
C15 - C28 Fraction	100	98%	88%	<100							
C29 - C36 Fraction	100	--	--	<100							
Sum of TPH C10 - C36	--	--	--	--							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E006.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/FID.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	28/5/07
Method : E029.2/E016.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E029.2/E016.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

Laboratory Identification		90241	90242	90243	90222d	90222r	90223d	90223r	90224d	90224r	90225s
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	--	29/5/07	--	29/5/07	--	30/5/07
Method : E029.2/E016.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	<10	<10	<10	<10	--	<10	--	<10	--	81%

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

Laboratory Identification		90226s	lcs	mb							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		30/5/07	28/5/07	28/5/07							
Method : E029.2/E016.2											
Volatile TPH by P&T (vTPH)	**EQL**										
C6 - C9 Fraction	10	79%	92%	<10							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E029.2/E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/FID/MSD.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		29/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of reported PAHs	--	--	--	--	--	--	--	--	--	--	--
2-FBP (Surr @ 5mg/kg)	--	*112%*	*94%*	*91%*	*102%*	*98%*	*91%*	*93%*	*92%*	*92%*	*98%*
TP-d14 (Surr @ 5mg/kg)	--	*96%*	*100%*	*96%*	*107%*	*102%*	*99%*	*98%*	*96%*	*98%*	*90%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07	29/5/07
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of reported PAHs	--	--	--	--	--	--	--	--	--	--	--
2-FBP (Surr @ 5mg/kg)	--	*98%*	*95%*	*90%*	*89%*	*94%*	*96%*	*92%*	*93%*	*90%*	*93%*
TP-d14 (Surr @ 5mg/kg)	--	*106%*	*102%*	*98%*	*97%*	*103%*	*107%*	*101%*	*101%*	*98%*	*99%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90241**	**90242**	**90243**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	96%
Acenaphthylene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	84%
Acenaphthene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	92%
Fluorene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	97%
Phenanthrene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	91%
Anthracene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	92%
Fluoranthene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	89%
Pyrene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	92%
Benz(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	104%
Chrysene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	91%
Benzo(b)&(k)fluoranthene	1	<1	<1	<1	<1	--	<1	--	<1	--	87%
Benzo(a) pyrene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	95%
Indeno(1,2,3-c,d)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	85%
Dibenz(a,h)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	89%
Benzo(g,h,i)perylene	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	86%
Sum of reported PAHs	--	--	--	--	--	--	--	--	--	--	--
2-FBP (Surr @ 5mg/kg)	--	*88%*	*99%*	*90%*	*93%*	*1%*	*90%*	*1%*	*90%*	*13%*	*95%*
TP-d14 (Surr @ 5mg/kg)	--	*95%*	*106%*	*100%*	*95%*	*5%*	*95%*	*1%*	*93%*	*14%*	*101%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90226s**	**lcs**	**mb**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07							
Method : E007.2											
Polyaromatic Hydrocarbons (PAH)	**EQL**										
Naphthalene	0.5	98%	106%	<0.5							
Acenaphthylene	0.5	89%	95%	<0.5							
Acenaphthene	0.5	99%	105%	<0.5							
Fluorene	0.5	101%	107%	<0.5							
Phenanthrene	0.5	96%	102%	<0.5							
Anthracene	0.5	100%	107%	<0.5							
Fluoranthene	0.5	95%	102%	<0.5							
Pyrene	0.5	95%	103%	<0.5							
Benz(a)anthracene	0.5	111%	112%	<0.5							
Chrysene	0.5	101%	105%	<0.5							
Benzo(b)&(k)fluoranthene	1	93%	95%	<1							
Benzo(a) pyrene	0.5	93%	112%	<0.5							
Indeno(1,2,3-c,d)pyrene	0.5	98%	113%	<0.5							
Dibenz(a,h)anthracene	0.5	97%	117%	<0.5							
Benzo(g,h,i)perylene	0.5	89%	95%	<0.5							
Sum of reported PAHs	--	--	--	--							
2-FBP (Surr @ 5mg/kg)	--	*99%*	*102%*	*103%*							
TP-d14 (Surr @ 5mg/kg)	--	*105%*	*108%*	*114%*							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E007.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		29/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-&4-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitrophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chloro-3-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum of reported phenols	--	--	--	--	--	--	--	--	--	--	--
2-FP (Surr @ 5mg/kg)	--	*100%*	*99%*	*95%*	*109%*	*101%*	*94%*	*98%*	*94%*	*94%*	*95%*
Phenol-d5 (Surr @ 5mg/kg)	--	*122%*	*93%*	*93%*	*105%*	*96%*	*93%*	*91%*	*89%*	*95%*	*100%*
2,4,6-TBP (Surr @ 5mg/kg)	--	*94%*	*93%*	*85%*	*97%*	*87%*	*81%*	*81%*	*75%*	*82%*	*84%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07	29/5/07
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-chlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
3-&4-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-nitrophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dimethylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-dichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
4-chloro-3-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sum of reported phenols	--	--	--	--	--	--	--	--	--	--	--
2-FP (Surr @ 5mg/kg)	--	*104%*	*98%*	*96%*	*92%*	*98%*	*100%*	*93%*	*99%*	*90%*	*98%*
Phenol-d5 (Surr @ 5mg/kg)	--	*95%*	*93%*	*92%*	*88%*	*94%*	*99%*	*91%*	*91%*	*87%*	*89%*
2,4,6-TBP (Surr @ 5mg/kg)	--	*94%*	*88%*	*85%*	*85%*	*88%*	*88%*	*82%*	*88%*	*87%*	*92%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90241**	**90242**	**90244**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-2	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	97%
2-chlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	93%
2-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	102%
3-&4-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	98%
2-nitrophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	106%
2,4-dimethylphenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	106%
2,4-dichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	95%
4-chloro-3-methylphenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	98%
2,4,6-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	88%
2,4,5-trichlorophenol	0.5	<0.5	<0.5	<0.5	<0.5	--	<0.5	--	<0.5	--	94%
Pentachlorophenol	1	<1	<1	<1	<1	--	<1	--	<1	--	122%
Sum of reported phenols	--	--	--	--	--	--	--	--	--	--	--
2-FP (Surr @ 5mg/kg)	--	*93%*	*100%*	*100%*	*98%*	*1%*	*94%*	*1%*	*93%*	*16%*	*100%*
Phenol-d5 (Surr @ 5mg/kg)	--	*86%*	*99%*	*100%*	*94%*	*1%*	*92%*	*1%*	*91%*	*14%*	*97%*
2,4,6-TBP (Surr @ 5mg/kg)	--	*80%*	*87%*	*89%*	*85%*	*9%*	*89%*	*5%*	*81%*	*18%*	*95%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90226s**	**lcs**	**mb**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07							
Method : E008.2											
Phenols by GC/MS	**EQL**										
Phenol	0.5	101%	108%	<0.5							
2-chlorophenol	0.5	98%	102%	<0.5							
2-methylphenol	0.5	94%	106%	<0.5							
3-&4-methylphenol	0.5	108%	120%	<0.5							
2-nitrophenol	0.5	107%	115%	<0.5							
2,4-dimethylphenol	0.5	108%	116%	<0.5							
2,4-dichlorophenol	0.5	100%	108%	<0.5							
4-chloro-3-methylphenol	0.5	99%	109%	<0.5							
2,4,6-trichlorophenol	0.5	95%	104%	<0.5							
2,4,5-trichlorophenol	0.5	95%	99%	<0.5							
Pentachlorophenol	1	125%	128%	<1							
Sum of reported phenols	--	--	--	--							
2-FP (Surr @ 5mg/kg)	--	*99%*	*103%*	*105%*							
Phenol-d5 (Surr @ 5mg/kg)	--	*101%*	*101%*	*104%*							
2,4,6-TBP (Surr @ 5mg/kg)	--	*101%*	*110%*	*93%*							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E008.2: 8-10g soil extracted with 20ml DCM/acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		28/5/07	28/5/07	25/5/07	25/5/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
Volatile Aromatic Compounds											
Benzene	0.5	<0.5	<0.5	94%	<0.5						
Toluene	0.5	<0.5	<0.5	99%	<0.5						
Ethylbenzene	0.5	<0.5	<0.5	104%	<0.5						
m- & p-xylene	1	<1	<1	104%	<1						
o-xylene	0.5	<0.5	<0.5	105%	<0.5						
Styrene	0.5	<0.5	<0.5	103%	<0.5						
Isopropylbenzene	0.5	<0.5	<0.5	107%	<0.5						
n-propylbenzene	0.5	<0.5	<0.5	104%	<0.5						
1,3,5-trimethylbenzene	0.5	<0.5	<0.5	103%	<0.5						
sec-butylbenzene	0.5	<0.5	<0.5	103%	<0.5						
1,2,4-trimethylbenzene	0.5	<0.5	<0.5	102%	<0.5						
tert-butylbenzene	0.5	<0.5	<0.5	104%	<0.5						
p-isopropyltoluene	0.5	<0.5	<0.5	100%	<0.5						
n-butylbenzene	0.5	<0.5	<0.5	102%	<0.5						
Naphthalene	0.5	<0.5	<0.5	112%	<0.5						
Halogenated Aliphatics											
Dichlorodifluoromethane	5	<5	<5	92%	<5						
Chloromethane	5	<5	<5	92%	<5						
Vinyl chloride	5	<5	<5	89%	<5						
Bromomethane	5	<5	<5	105%	<5						
Chloroethane	5	<5	<5	95%	<5						
Trichlorofluoromethane	5	<5	<5	95%	<5						
1,1-dichloroethene	0.5	<0.5	<0.5	95%	<0.5						
trans-1,2-dichloroethene	0.5	<0.5	<0.5	93%	<0.5						
1,1-dichloroethane	0.5	<0.5	<0.5	93%	<0.5						
cis-1,2-dichloroethene	0.5	<0.5	<0.5	94%	<0.5						

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		28/5/07	28/5/07	25/5/07	25/5/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
2,2-dichloropropane	0.5	<0.5	<0.5	93%	<0.5						
Chloroform	0.5	<0.5	<0.5	94%	<0.5						
1,1,1-trichloroethane	0.5	<0.5	<0.5	96%	<0.5						
1,2-dichloroethane	0.5	<0.5	<0.5	92%	<0.5						
1,1-dichloropropene	0.5	<0.5	<0.5	96%	<0.5						
Carbon tetrachloride	0.5	<0.5	<0.5	95%	<0.5						
Trichloroethene	0.5	<0.5	<0.5	93%	<0.5						
1,2-dichloropropane	0.5	<0.5	<0.5	93%	<0.5						
Dibromomethane	0.5	<0.5	<0.5	85%	<0.5						
Bromodichloromethane	0.5	<0.5	<0.5	99%	<0.5						
cis-1,3-dichloropropene	0.5	<0.5	<0.5	109%	<0.5						
trans-1,3-dichloropropene	0.5	<0.5	<0.5	89%	<0.5						
1,1,2-trichloroethane	0.5	<0.5	<0.5	93%	<0.5						
1,3-dichloropropane	0.5	<0.5	<0.5	94%	<0.5						
Chlorodibromomethane	0.5	<0.5	<0.5	92%	<0.5						
Tetrachloroethene	0.5	<0.5	<0.5	95%	<0.5						
1,2-dibromoethane	0.5	<0.5	<0.5	95%	<0.5						
1,1,1,2-tetrachloroethane	0.5	<0.5	<0.5	102%	<0.5						
Bromoform	0.5	<0.5	<0.5	99%	<0.5						
1,1,2,2-tetrachloroethane	0.5	<0.5	<0.5	97%	<0.5						
1,2,3-trichloropropane	0.5	<0.5	<0.5	99%	<0.5						
1,2-dibromo-3-chloropropane	0.5	<0.5	<0.5	101%	<0.5						
Hexachlorobutadiene	0.5	<0.5	<0.5	103%	<0.5						
Halogenated Aromatics											
Chlorobenzene	0.5	<0.5	<0.5	105%	<0.5						
Bromobenzene	0.5	<0.5	<0.5	101%	<0.5						
2-chlorotoluene	0.5	<0.5	<0.5	104%	<0.5						

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		28/5/07	28/5/07	25/5/07	25/5/07						
Method : E016.2											
Volatile Organic Compounds (VOC)	**EQL**										
4-chlorotoluene	0.5	<0.5	<0.5	101%	<0.5						
1,3-dichlorobenzene	0.5	<0.5	<0.5	100%	<0.5						
1,4-dichlorobenzene	0.5	<0.5	<0.5	101%	<0.5						
1,2-dichlorobenzene	0.5	<0.5	<0.5	99%	<0.5						
1,2,4-trichlorobenzene	0.5	<0.5	<0.5	111%	<0.5						
1,2,3-trichlorobenzene	0.5	<0.5	<0.5	114%	<0.5						
Oxygenated Compounds											
Vinyl acetate	5	<5	<5	91%	<5						
Ethyl acetate	0.5	<0.5	<0.5	91%	<0.5						
tert-butylmethylether (TBME)	0.5	<0.5	<0.5	93%	<0.5						
Sulphonated Compounds											
Carbon disulfide	0.5	<0.5	<0.5	92%	<0.5						
Surrogate Standards											
BCP (Surr @ 20mg/kg)	--	*80%*	*90%*	*93%*	*93%*						
DCFB (Surr @ 20mg/kg)	--	*73%*	*74%*	*98%*	*90%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E016.2: 8-10g soil extracted with 20ml methanol. Analysis by P&T/GC/MS. (NB) Acetone and Dichloromethane not reported unless requested.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
DBC (Surr @ 0.2mg/kg)	--	*109%*	*99%*	*101%*	*101%*	*99%*	*104%*	*103%*	*101%*	*103%*	*104%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
DBC (Surr @ 0.2mg/kg)	--	*105%*	*104%*	*105%*	*106%*	*104%*	*106%*	*107%*	*104%*	*108%*	*102%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90241**	**90242**	**90244**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-2	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--	25/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	117%
Hexachlorobenzene	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	107%
b-BHC	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	118%
g-BHC (Lindane)	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	118%
d-BHC	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	109%
Heptachlor	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	106%
Aldrin	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	109%
Heptachlor epoxide	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	111%
trans-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	110%
Endosulfan I	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	112%
cis-chlordane	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	111%
Dieldrin	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	108%
4,4-DDE	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	104%
Endrin	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	109%
Endosulfan II	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	112%
4,4-DDD	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	117%
Endosulfan sulphate	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	125%
4,4-DDT	0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	--	<0.2	--	108%
Methoxychlor	0.2	<0.2	<0.2	<0.2	<0.2	--	<0.2	--	<0.2	--	111%
DBC (Surr @ 0.2mg/kg)	--	*99%*	*104%*	*89%*	*99%*	*0%*	*101%*	*0%*	*101%*	*0%*	*101%*

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90226s**	**lcs**	**mb**							
Sample Identification		QC	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		--	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07							
Method : E013.2											
Organochlorine Pesticides (OC)	**EQL**										
a-BHC	0.05	115%	115%	<0.05							
Hexachlorobenzene	0.05	106%	107%	<0.05							
b-BHC	0.05	115%	117%	<0.05							
g-BHC (Lindane)	0.05	115%	117%	<0.05							
d-BHC	0.05	107%	106%	<0.05							
Heptachlor	0.05	105%	102%	<0.05							
Aldrin	0.05	109%	111%	<0.05							
Heptachlor epoxide	0.05	110%	107%	<0.05							
trans-chlordane	0.05	109%	112%	<0.05							
Endosulfan I	0.05	112%	111%	<0.05							
cis-chlordane	0.05	111%	113%	<0.05							
Dieldrin	0.05	107%	108%	<0.05							
4,4-DDE	0.05	102%	102%	<0.05							
Endrin	0.05	108%	110%	<0.05							
Endosulfan II	0.05	110%	111%	<0.05							
4,4-DDD	0.05	107%	112%	<0.05							
Endosulfan sulphate	0.05	122%	129%	<0.05							
4,4-DDT	0.2	106%	110%	<0.2							
Methoxychlor	0.2	108%	112%	<0.2							
DBC (Surr @ 0.2mg/kg)	--	*99%*	*99%*	*101%*							

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		28/5/07	29/5/07	28/5/07	28/5/07						
Method : E013.2											
Polychlorinated Biphenyls (PCB)	**EQL**										
Arochlor 1016	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1232	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1242	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1248	0.5	<0.5	<0.5	96%	<0.5						
Arochlor 1254	0.5	<0.5	<0.5	--	<0.5						
Arochlor 1260	0.5	<0.5	<0.5	--	<0.5						
Sum of reported PCBs	--	--	--	--	--						
DBC (Surr @ 0.2mg/kg)	--	*109%*	*104%*	*101%*	*101%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E013.2: 8-10g soil extracted with 20ml hexane/acetone (1:1). Analysis by GC/dual ECD.

Laboratory Identification		**90220**	**90230**	**lcs**	**mb**						
Sample Identification		IF-1	IF-10	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		23/5/07	23/5/07	--	--						
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07						
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07						
Method : E017.2											
Semivolatile Chlorinated Hydrocarbons	**EQL**										
1,3-dichlorobenzene	0.5	<0.5	<0.5	105%	<0.5						
1,4-dichlorobenzene	0.5	<0.5	<0.5	112%	<0.5						
1,2-dichlorobenzene	0.5	<0.5	<0.5	106%	<0.5						
Hexachloroethane	0.5	<0.5	<0.5	99%	<0.5						
1,2,4-trichlorobenzene	0.5	<0.5	<0.5	102%	<0.5						
Hexachloropropene	0.5	<0.5	<0.5	97%	<0.5						
Hexachlorobutadiene	0.5	<0.5	<0.5	103%	<0.5						
Hexachlorocyclopentadiene	2	<2	<2	104%	<2						
Pentachlorobenzene	0.5	<0.5	<0.5	99%	<0.5						
Hexachlorobenzene	0.5	<0.5	<0.5	108%	<0.5						
NB-d5 (Surr @ 5mg/kg)	--	*95%*	*81%*	*95%*	*88%*						
2-FBP (Surr @ 5mg/kg)	--	*112%*	*98%*	*102%*	*105%*						
TP-d14 (Surr @ 5mg/kg)	--	*96%*	*90%*	*96%*	*92%*						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E017.2: 8-10g soil extracted with 20ml DCM/Acetone (8:2). Analysis by GC/MS.

Laboratory Identification		**90245**	**lcs**	**mb**							
Sample Identification		IF/TB-1	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		23/5/07	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		25/5/07	25/5/07	25/5/07							
Method : E026.1											
Unfiltered metals	**EQL**										
Mercury	0.1	<0.1	107%	<0.1							

Results expressed in ug/l unless otherwise specified

Comments:

E026.1: 25ml digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		90220	90222	90223	90224	90225	90226	90227	90228	90229	90230
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		90231	90232	90233	90234	90235	90236	90237	90238	90239	90240
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07	29/5/07
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		90241	90242	90243	90222d	90222r	90223d	90223r	90224d	90224r	90225s
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07	--	29/5/07	--	29/5/07	--	29/5/07
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	<0.05	<0.05	<0.05	<0.05	--	<0.05	--	<0.05	--	103%

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		90226s	crm	lcs	mb						
Sample Identification		QC	QC	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		--	--	--	--						
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07						
Laboratory Analysis Date		29/5/07	29/5/07	29/5/07	29/5/07						
Method : E026.2											
Acid extractable mercury	**EQL**										
Mercury	0.05	102%	105%	99%	<0.05						

Results expressed in mg/kg dry weight unless otherwise specified

Comments:

E026.2: 0.5g digested with nitric/hydrochloric acid. Analysis by CV-ICP-MS or FIMS.

Laboratory Identification		**90245**	**lcs**	**mb**							
Sample Identification		IF/TB-1	QC	QC							
Depth (m)		--	--	--							
Sampling Date recorded on COC		23/5/07	--	--							
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07							
Laboratory Analysis Date		25/5/07	25/5/07	25/5/07							
Method : E022.1/E030.1											
Unfiltered metals	**EQL**										
Antimony	5	<5	95%	<5							
Arsenic	5	<5	95%	<5							
Barium	5	<5	96%	<5							
Beryllium	1	<1	87%	<1							
Boron	10	<10	90%	<10							
Cadmium	0.5	<0.5	88%	<0.5							
Chromium	5	<5	97%	<5							
Cobalt	5	<5	97%	<5							
Copper	5	<5	100%	<5							
Lead	5	<5	104%	<5							
Manganese	5	<5	97%	<5							
Molybdenum	5	<5	98%	<5							
Nickel	5	<5	93%	<5							
Selenium	5	<5	96%	<5							
Tin	5	<5	90%	<5							
Vanadium	10	<10	95%	<10							
Zinc	5	<5	97%	<5							

Results expressed in ug/l unless otherwise specified

Comments:

E022.1/E030.1: 25ml digested in nitric/hydrochloric acid. Analysis by ICP-MS/ICP-OES.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	1	1	1	2	1	9	<1	2	2	1	2
Barium	5	140	140	180	250	170	150	160	130	160	100
Beryllium	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	5	7	6	7	8	7	8	7	6	7	6
Cadmium	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	1	16	14	18	16	27	15	15	18	18	16
Cobalt	1	16	10	16	11	45	16	10	16	12	11
Copper	2	7	6	8	7	19	6	6	8	9	8
Lead	2	9	9	10	9	10	9	9	9	8	8
Manganese	5	170	160	250	140	690	130	77	180	160	140
Molybdenum	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	1	11	9	14	9	40	8	11	16	11	9
Selenium	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	2
Vanadium	5	--	35	49	46	120	38	51	48	51	--
Zinc	5	7	5	6	6	11	5	<5	6	6	6

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Arsenic	1	1	1	<1	12	<1	<1	<1	2	<1	2
Barium	5	140	260	140	290	140	160	210	190	300	360
Beryllium	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Boron	5	6	6	6	8	8	7	7	7	5	8
Cadmium	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chromium	1	18	18	18	36	17	15	22	21	18	22
Cobalt	1	23	16	19	32	10	9	13	28	12	18
Copper	2	7	7	7	17	6	5	6	10	6	8
Lead	2	9	9	9	10	8	7	9	12	9	10
Manganese	5	110	160	320	320	96	50	150	220	290	240
Molybdenum	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Nickel	1	14	15	12	33	8	5	11	14	11	14
Selenium	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Tin	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium	5	43	42	39	150	36	32	36	57	37	55
Zinc	5	6	6	6	10	6	5	7	7	5	8

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**90241**	**90242**	**90243**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**	**90225s**
Sample Identification		IF-21	IF-22	IF/QS-1	QC	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	--	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	--	28/5/07	--	28/5/07	--	28/5/07
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	<1	<1	<1	<1	--	<1	--	<1	--	75%
Arsenic	1	1	1	1	1	0%	2	0%	1	0%	95%
Barium	5	130	210	200	130	7%	170	6%	260	4%	#
Beryllium	1	<1	<1	<1	<1	--	<1	--	<1	--	102%
Boron	5	7	7	<5	6	0%	6	15%	8	0%	98%
Cadmium	0.1	<0.1	<0.1	<0.1	<0.1	--	<0.1	--	<0.1	--	92%
Chromium	1	18	20	20	14	0%	17	6%	18	12%	126%
Cobalt	1	8	10	17	9	11%	16	0%	11	0%	148%
Copper	2	7	7	8	6	0%	7	13%	7	0%	113%
Lead	2	9	9	9	9	0%	10	0%	9	0%	103%
Manganese	5	31	120	170	160	0%	240	4%	140	0%	#
Molybdenum	1	<1	<1	<1	<1	--	<1	--	<1	--	79%
Nickel	1	8	11	10	9	0%	13	7%	10	11%	135%
Selenium	2	<2	<2	<2	<2	--	<2	--	<2	--	61%
Tin	1	<1	<1	<1	<1	--	<1	--	<1	--	85%
Vanadium	5	48	49	52	35	0%	47	4%	45	2%	#
Zinc	5	6	7	7	6	18%	5	18%	6	0%	105%

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		**90226s**	**crm**	**lcs**	**mb**						
Sample Identification		QC	QC	QC	QC						
Depth (m)		--	--	--	--						
Sampling Date recorded on COC		--	--	--	--						
Laboratory Extraction (Preparation) Date		28/5/07	28/5/07	28/5/07	28/5/07						
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07						
Method : E022.2											
Acid extractable metals	**EQL**										
Antimony	1	61%	--	94%	<1						
Arsenic	1	69%	107%	97%	<1						
Barium	5	#	88%	96%	<5						
Beryllium	1	102%	93%	88%	<1						
Boron	5	104%	--	89%	<5						
Cadmium	0.1	86%	97%	97%	<0.1						
Chromium	1	109%	102%	100%	<1						
Cobalt	1	95%	101%	103%	<1						
Copper	2	98%	100%	102%	<2						
Lead	2	94%	95%	98%	<2						
Manganese	5	#	98%	101%	<5						
Molybdenum	1	73%	100%	98%	<1						
Nickel	1	101%	101%	98%	<1						
Selenium	2	48%	103%	95%	<2						
Tin	1	84%	83%	96%	<1						
Vanadium	5	79%	103%	103%	<5						
Zinc	5	101%	97%	94%	<5						

Results expressed in mg/kg dry weight unless otherwise specified

Comments: # Percent recovery not available due to significant background levels of analyte in sample.

E022.2: 0.5g digested in nitric/hydrochloric acid. Analysis by ICP-MS.

Laboratory Identification		90220	90222	90223	90224	90225	90226	90227	90228	90229	90230
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		25/5/07	25/5/07	25/5/07	25/5/07	28/5/07	28/5/07	28/5/07	28/5/07	25/5/07	25/5/07
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	8.9	8.9	9.1	9.3	9.2	9.1	9.3	9.3	9.2	9.3

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		90231	90232	90233	90234	90235	90236	90237	90238	90239	90240
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	28/5/07	28/5/07	28/5/07
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	9.4	9.3	9.2	9.3	9.2	9.3	9.5	9.4	9.4	9.3

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		**90241**	**90242**	**90222d**	**90222r**	**90223d**	**90223r**	**90224d**	**90224r**		
Sample Identification		IF-21	IF-22	QC	QC	QC	QC	QC	QC		
Depth (m)		--	--	--	--	--	--	--	--		
Sampling Date recorded on COC		23/5/07	23/5/07	--	--	--	--	--	--		
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--		
Laboratory Analysis Date		28/5/07	28/5/07	25/5/07	--	25/5/07	--	25/5/07	--		
Method : E018.2											
pH in soil	**EQL**										
pH (pH units)	0.1	9.1	9.3	9.1	2%	9.0	1%	9.2	1%		

Results expressed in pH units unless otherwise specified

Comments:

E018.2: 1:5 soil leachate. Followed by measurement by pH ion selective electrode. Results expressed as per leachate.

Laboratory Identification		**90220**	**90222**	**90223**	**90224**	**90225**	**90226**	**90227**	**90228**	**90229**	**90230**
Sample Identification		IF-1	IF-2	IF-3	IF-4	IF-5	IF-6	IF-7	IF-8	IF-9	IF-10
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E005.2											
Moisture	**EQL**										
Moisture	--	27	27	24	29	29	31	26	26	21	29

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Laboratory Identification		**90231**	**90232**	**90233**	**90234**	**90235**	**90236**	**90237**	**90238**	**90239**	**90240**
Sample Identification		IF-11	IF-12	IF-13	IF-14	IF-15	IF-16	IF-17	IF-18	IF-19	IF-20
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07	23/5/07
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	25/5/07
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	28/5/07
Method : E005.2											
Moisture	**EQL**										
Moisture	--	30	24	26	26	25	29	21	24	28	22

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Final
Certificate of Analysis

Laboratory Identification		90241	90242	90243	90244	90222d	90222r	90223d	90223r	90224d	90224r
Sample Identification		IF-21	IF-22	IF/QS-1	IF/QS-2	QC	QC	QC	QC	QC	QC
Depth (m)		--	--	--	--	--	--	--	--	--	--
Sampling Date recorded on COC		23/5/07	23/5/07	23/5/07	23/5/07	--	--	--	--	--	--
Laboratory Extraction (Preparation) Date		25/5/07	25/5/07	25/5/07	25/5/07	25/5/07	--	25/5/07	--	25/5/07	--
Laboratory Analysis Date		28/5/07	28/5/07	28/5/07	28/5/07	28/5/07	--	28/5/07	--	28/5/07	--
Method : E005.2											
Moisture	**EQL**										
Moisture	--	23	27	27	23	19	35%	25	4%	26	11%

Results expressed in % w/w unless otherwise specified

Comments:

E005.2: Moisture by gravimetric analysis. Results are in % w/w.

Quality, Service, Support

Report Date : 24/05/2007
Report Time : 1:59:00PM

Sample **Receipt** Notice (SRN) for **E032113**

Client Details		Laboratory Reference Information	
Client Name:	OTEK Australia Pty Ltd	**Please have this information ready when contacting Labmark.**	
Client Phone:	03 9525 5155		
Client Fax:	03 9593 8555	**Laboratory Report:**	**E032113**
Contact Name:	Tom Santwyk-Anderson	**Quotation Number:**	Q0148.EM
Contact Email:	tsantwyk-anderson@otek.com.au	**Laboratory Address:**	116 Moray St. South Melbourne VIC 3205
Client Address:	Level 1, 222 St. Kilda Rd St.Kilda VIC 3182	**Phone:**	61 3 9686 8344
		Fax:	61 3 9686 7344
Project Name:	Werribee Area 4	**Sample Receipt Contact:**	Kalya Pilbeam
Project Number:	3106004	**Email:**	kalya.pilbeam@labmark.com.au
CoC Number:	- Not provided -	**Reporting Contact:**	Kalya Pilbeam
Purchase Order:	30943	**Email:**	kalya.pilbeam@labmark.com.au
Surcharge:	No surcharge applied (results by 6:30pm on due date)		
Sample Matrix:	SOIL & WATER		
Date Sampled (earliest date):	23/05/2007	**NATA Accreditation:**	13542 **Corporate Site No. :** 15897
Date Samples Received:	23/05/2007	**TGA GMP License:**	185-336 (Sydney)
Date Sample Receipt Notice issued:	24/05/2007	**APVMA License:**	6105 (Sydney)
Date Preliminary Report Due:	30/05/2007	**AQIS Approval:**	NO356 (Sydney)
		AQIS Entry Permit:	200521534 (Sydney)

Reporting Requirements: Electronic Data Download required: No

Sample Condition: COC received with samples. Report number and lab ID's defined on COC.
Samples received in good order .
Samples received with cooling media: Crushed ice .
Samples received chilled.
Security seals: Direct.
Sample container & chemical preservation suitable .

Comments: Samples forwarded to ALS as requested. Total cyanide and Fluoride analysed in Sydney, these results may be delayed.

Holding Times: Date received allows for sufficient time to meet Technical Holding Times.

Preservation: Chemical preservation of samples satisfactory for requested analytes.

Important Notes:

LabMark shall responsibly dispose of spent customer soil and water samples which includes the disintegration of the sample label. A sample disposal fee of $1.00 is applicable on all samples received by the laboratory regardless of whether they have undergone analytical testing. Sample disposal of environmental samples shall be 31 days (water) and 3 months (soil, HN03 preserved samples) after laboratory receipt, unless otherwise requested in writing by the client. Samples requested to be held in non-refrigerated storage shall incur $5.00/ sample/ 3 months. Additional refrigerated storage shall incur $30/ sample/ 3 months. Combination prices apply only if requested. Transfer of report ownership from LabMark to the client shall occur once full and final payment has been settled and verified. All report copies may be retracted where full payment does not occur within the agreed settlement period.

Analysis comments:

VOC E016.2: Acetone and Dichloromethane not reported unless requested.

Subcontracted Analyses:

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Report Date : 24/05/2007
Report Time : 1:59:00PM

Quality, Service, Support

Sample **Receipt** Notice (SRN) for **E032113**

The table below represents LabMark's understanding and interpretation of the customer supplied sample COC request. Please confirm that your COC request has been entered correctly. Due to THT and TAT requirements, testing shall commence immediately as per this table, unless the customer intervenes with a correction prior to testing.

GRID REVIEW TABLE

				Requested Analysis																			
No.	**Date**	**Depth**	**Client Sample ID**	Fluoride	Acid extractable mercury	Unfiltered metals	Acid extractable metals	Unfiltered metals	Moisture	Organochlorine Pesticides (OC)	Polyaromatic Hydrocarbons (PAH)	Polychlorinated Biphenyls (PCB)	pH in soil	Phenols by GC/MS	PREP Not Reported	PREP Not Reported	Semivolatile Chlorinated Hydrocarbons	Total Cyanide	Petroleum Hydrocarbons (TPH)	Volatile Organic Compounds (VOC)	Volatile TPH by P&T (vTPH)		
90220	23/05		IF-1	●	●		●		●	●	●	●	●	●	●		●	●	●	●	●		
90222	23/05		IF-2		●		●		●	●	●		●	●	●				●		●		
90223	23/05		IF-3		●		●		●	●	●		●	●	●				●		●		
90224	23/05		IF-4		●		●		●	●	●		●	●	●				●		●		
90225	23/05		IF-5		●		●		●	●	●		●	●	●				●		●		
90226	23/05		IF-6		●		●		●	●	●		●	●	●				●		●		
90227	23/05		IF-7		●		●		●	●	●		●	●	●				●		●		
90228	23/05		IF-8		●		●		●	●	●		●	●	●				●		●		
90229	23/05		IF-9		●		●		●	●	●		●	●	●				●		●		
90230	23/05		IF-10	●	●		●		●	●	●	●	●	●	●		●	●	●	●	●		
90231	23/05		IF-11		●		●		●	●	●		●	●	●				●		●		
90232	23/05		IF-12		●		●		●	●	●		●	●	●				●		●		
90233	23/05		IF-13		●		●		●	●	●		●	●	●				●		●		
90234	23/05		IF-14		●		●		●	●	●		●	●	●				●		●		
90235	23/05		IF-15		●		●		●	●	●		●	●	●				●		●		
90236	23/05		IF-16		●		●		●	●	●		●	●	●				●		●		
90237	23/05		IF-17		●		●		●	●	●		●	●	●				●		●		
90238	23/05		IF-18		●		●		●	●	●		●	●	●				●		●		
90239	23/05		IF-19		●		●		●	●	●		●	●	●				●		●		
90240	23/05		IF-20		●		●		●	●	●		●	●	●				●		●		
90241	23/05		IF-21		●		●		●	●	●		●	●	●				●		●		
90242	23/05		IF-22		●		●		●	●	●		●	●	●				●		●		
90243	23/05		IF/QS-1		●		●		●		●				●				●		●		
90244	23/05		IF/QS-2						●	●				●	●								
90245	23/05		IF/TB-1			●		●								●							
			Totals:	2	23	1	23	1	24	23	23	2	22	23	24	1	2	2	23	2	23		

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Report Date : 24/05/2007
Report Time : 1:59:00PM

Quality, Service, Support

Sample **Receipt** Notice (SRN) for **E032113**

No.	Date	Depth	Client Sample ID	Requested Analysis																			
				M17 - MET-T_S	M17 - MET-T_W	MET-T_S Vanadium	MET-T_W Vanadium																
90220	23/05		IF-1	●																			
90222	23/05		IF-2	●		●																	
90223	23/05		IF-3	●		●																	
90224	23/05		IF-4	●		●																	
90225	23/05		IF-5	●		●																	
90226	23/05		IF-6	●		●																	
90227	23/05		IF-7	●		●																	
90228	23/05		IF-8	●		●																	
90229	23/05		IF-9	●		●																	
90230	23/05		IF-10	●																			
90231	23/05		IF-11	●		●																	
90232	23/05		IF-12	●		●																	
90233	23/05		IF-13	●		●																	
90234	23/05		IF-14	●		●																	
90235	23/05		IF-15	●		●																	
90236	23/05		IF-16	●		●																	
90237	23/05		IF-17	●		●																	
90238	23/05		IF-18	●		●																	
90239	23/05		IF-19	●		●																	
90240	23/05		IF-20	●		●																	
90241	23/05		IF-21	●		●																	
90242	23/05		IF-22	●		●																	
90243	23/05		IF/QS-1	●		●																	
90245	23/05		IF/TB-1		●		●																
			Totals:	23	1	21	1																

Thank you for choosing Labmark to analyse your project samples.
Additional information on www.labmark.com.au

Chain of Custody & Analysis Request

LAB	Labmark
ADDRESS	116 Moray St, South Melbourne VIC
LAB CONTACT	Paul Woodward
PHONE	9686 8344

Page 1 of

OTEK Australia Pty Ltd
Lvl 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
_____@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT # 3106004

PROJECT NAME: Werribee Area 4

COLLECTORS NAME: Tom Santwyk-Anderson
tsantwyk-anderson@otek.com.au

LAB JOB # E032113

PRELIM. RESULTS BY: VERBAL ☑ FAX ☑ EMAIL

FINAL REPORT BY: 30.5.07

LAB QUOTE REF: Q0148.EM

OTEK PO No.: 30943

REMARKS

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDII ED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: TPH (C_6-C	TPH (C_6-C	TPH (C_6-C)	OCP	BTEX (Purge & Trap)	Lead	PAH	Benzo(a)pyrene to 0.01µg/l	Total Phenols	Full VIC EPA Screen	Phenols	Metals (As, Ba, Be, [illegible] d, Cr, Co, Cu, Pb, Mn, [illegible] Mo, Ni, Sb, Se, Sn, V, Zn)	Metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg)	OCs/OPs/PCBs	Asbestos	Ecoli	pH
IF-1		90220		X			X				23.5.07	2										X							X
IF-2		90222		X			X					1			X	X			X				X	X					X
IF-3		90223		X			X					1			X	X			X				X	X					X
IF-4		90224		X			X					1			X	X			X				X	X					X
IF-5		90225		X			X					1			X	X			X				X	X					X
IF-6		90226		X			X					1			X	X			X				X	X					X
IF-7		90227		X			X					1			X	X			X				X	X					X
IF-8		90228		X			X					1			X	X			X				X	X					X
IF-9		90229		X			X					1			X	X			X				X	X					X
IF-10		90230		X			X					2										X							X
IF-11		90231		X			X					1			X	X			X				X	X					X
IF-12		90232		X			X					1			X	X			X				X	X					X
IF-13		90233		X			X					1			X	X			X				X	X					X
IF-14		90234		X			X					1			X	X			X				X	X					X
IF-15		90235		X			X					1			X	X			X				X	X					X
IF-16	-	90236		X			X					1			X	X			X				X	X					X
IF-17		90237		X			X					1			X	X			X				X	X					X
IF-18		90238		X			X					1			X	X			X				X	X					X
IF-19		90239		X			X					1			X	X			X				X	X					X
IF-20		90240		X			X					1			X	X			X				X	X					X
IF-21		90241		X			X					1			X	X			X				X	X					X
IF-22		90242		X			X					1			X	X			X				X	X					X
IF/QS-1		90243		X			X					1			X				X					X					
IF/QS-2		90244		X			X					1				X							X						
IF/TB-1		90245	X				X				↓													X					
This Page				24	0	0	25	0	0	0		24	0	0	21	21	0	0	21	0	0	2	21	22	0	0	0	0	22

Relinquished by:	Date: 23.5.07	Time: 13.40	Received by: OLA HADDARA	Date: 23/5	Time: 1.43pm	Custody Seals Intact? Yes / No / NA
Relinquished by:	Date:	Time:	Received by:	Date:	Time:	Samples Received Chilled? (Yes) / No

Additional Comments:
48 hr turnaround requested, Please provide electronic results in ESDAT format

ALS Environmental

INTERPRETIVE QUALITY CONTROL REPORT

Client	:	**OTEK**	**Laboratory**	:	Environmental Division Melbourne	**Page**	: **1 of 5**
Contact	:	MR TOM SANTWYK-ANDERSON	**Contact**	:	Paul Loewy		
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182	**Address**	:	4 Westall Rd Springvale VIC Australia 3171	**Work order**	: **EM0703857**
						Amendment No.	:
Project	:	3106004	**Quote number**	:	EN/018/07	**Date received**	: 25 May 2007
Order number	:	30944				**Date issued**	: 1 Jun 2007
C-O-C number	:	- Not provided -					
Site	:	WERRIBEE AREA 4					
E-mail	:	tsantwyk-anderson@otek.com.au	**E-mail**	:	paul.loewy@alsenviro.com	**No. of samples**	
Telephone	:	9525 5155	**Telephone**	:	61-3-8549 9600	**Received**	: 2
Facsimile	:	9593 8555	**Facsimile**	:	61-3-8549 9601	**Analysed**	: 2

This Interpretive Quality Control Report was issued on 1 Jun 2007 for the ALS work order reference EM0703857 and supersedes any previous reports with this reference.
This report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Type Frequency Compliance
- Summary of all Quality Control Outliers
- Brief Method Summaries

Interpretive Quality Control Report - Analysis Holding Time

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the sample aliquot was taken. Elapsed time to analysis represents time from sampling where no extraction / digestion is involved or time from extraction / digestion where this is present. For composite samples, sampling date/time is taken as that of the oldest sample contributing to that composite. Sample date/time for laboratory produced leaches are taken from the completion date/time of the leaching process. Outliers for holding time are based on USEPA SW846, APHA, AS and NEPM (1999). Failed outliers, refer to the 'Summary of Outliers'.

Matrix Type: SOIL ***Analysis Holding Time and Preservation***

Method / **Container /** Client Sample ID(s)	**Date Sampled**	**Extraction / Preparation**			**Analysis**		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
EA055-103: Moisture Content							
Soil Glass Jar - Unpreserved							
IF/QS-1A, IF/QS-2A	**23 May 2007**	----	----	----	**30 May 2007**	30 May 2007	Pass
Soil Glass Jar - Unpreserved							
IF/QS-2A	**23 May 2007**	----	----	----	**31 May 2007**	30 May 2007	**Fail by 1 day**
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved							
IF/QS-1A	**23 May 2007**	**30 May 2007**	19 Nov 2007	Pass	**31 May 2007**	19 Nov 2007	Pass
EG035T: Total Mercury by FIMS							
Soil Glass Jar - Unpreserved							
IF/QS-1A	**23 May 2007**	**30 May 2007**	20 Jun 2007	Pass	**31 May 2007**	20 Jun 2007	Pass
EP068: Pesticides by GCMS							
Soil Glass Jar - Unpreserved							
IF/QS-2A	**23 May 2007**	**31 May 2007**	6 Jun 2007	Pass	**1 Jun 2007**	10 Jul 2007	Pass
EP071: TPH - Semivolatile Fraction							
Soil Glass Jar - Unpreserved							
IF/QS-1A	**23 May 2007**	**30 May 2007**	6 Jun 2007	Pass	**30 May 2007**	9 Jul 2007	Pass
EP075(SIM): PAH/Phenols (SIM)							
Soil Glass Jar - Unpreserved							
IF/QS-1A, IF/QS-2A	**23 May 2007**	**30 May 2007**	6 Jun 2007	Pass	**30 May 2007**	9 Jul 2007	Pass
EP080: TPH Volatiles/BTEX							
Soil Glass Jar - Unpreserved							
IF/QS-1A	**23 May 2007**	**30 May 2007**	6 Jun 2007	Pass	**30 May 2007**	6 Jun 2007	Pass

Interpretive Quality Control Report - Frequency of Quality Control Samples

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which this work order was processed. Actual rate should be greater than or equal to the expected rate.

Matrix Type: SOIL ***Frequency of Quality Control Samples***

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
EA055-103: Moisture Content	4	40	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG005T: Total Metals by ICP-AES	2	20	**10.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	4	**25.0**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides by GCMS	2	11	**18.2**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	8	**12.5**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	8	**12.5**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	9	**11.1**	**10.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Laboratory Control Samples (LCS)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	4	**25.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides by GCMS	1	11	**9.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	9	**11.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Method Blanks (MB)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	4	**25.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides by GCMS	1	11	**9.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	9	**11.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
Matrix Spikes (MS)					
EG005T: Total Metals by ICP-AES	1	20	**5.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EG035T: Total Mercury by FIMS	1	4	**25.0**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP068: Pesticides by GCMS	1	11	**9.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP071: TPH - Semivolatile Fraction	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP075(SIM): PAH/Phenols (SIM)	1	8	**12.5**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement
EP080: TPH Volatiles/BTEX	1	9	**11.1**	**5.0**	NEPM 1999 Schedule B(3) and ALSE QCS3 requirement

Interpretive Quality Control Report - Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged on the 'Quality Control Report'. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot.

Non-surrogates

ALS QC Lot	Matrix Type	Laboratory Sample ID	Client Sample ID	Analyte	Data	Limits	Comment
Laboratory Control Samples (LCS)							
EP068A: Organochlorine Pesticides (OC)	SOIL	462453-001	----	Aldrin	122 %	60-120 %	Recovery greater than upper control limit
Matrix Spikes (MS)							
EG005T: Total Metals by ICP-AES	SOIL	EM0703878-001	Anonymous	Manganese	ND	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP068A: Organochlorine Pesticides (OC)	SOIL	EM0704001-031	Anonymous	gamma-BHC	65.0 %	70-130 %	Recovery less than lower data quality objective
				Endrin	57.4 %	70-130 %	Recovery less than lower data quality objective
EP075(SIM)A: Phenolic Compounds	SOIL	EM0703857-002	IF/QS-2A	Pentachlorophenol	51.2 %	70-130 %	Recovery less than lower control limit

- **For all matrices, no RPD recovery outliers occur for the duplicate analysis.**
- **For all matrices, no method blank result outliers occur.**

Surrogates

- **For all matrices, no surrogate recovery outliers occur.**

Outliers : Analysis Holding Time

The following report highlights outliers within this 'Interpretive Quality Control Report - Analysis Holding Time'.

Method / **Container /** Client Sample ID(s)	**Date Sampled**	**Extraction / Preparation**			**Analysis**		
		Date extracted	Due for extraction	Pass?	Date analysed	Due for analysis	Pass?
EA055-103: Moisture Content							
Soil Glass Jar - Unpreserved IF/QS-2A	**23 May 2007**	----	----	----	**31 May 2007**	30 May 2007	**Fail by 1 day**

Outliers : Frequency of Quality Control Samples

The following report highlights outliers within this 'Interpretive Quality Control Report - Frequency of Quality Control Samples'.

- **No frequency outliers occur.**

Method Reference Summary

The analytical procedures used by ALS Environmental are based on established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house procedure are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

Matrix Type: SOIL ***Method Reference Summary***

Preparation Methods

EN69 : Hot Block Digest for metals in soils sediments and sludges - USEPA 200.2 Mod. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (1999) Schedule B(3) (Method 202)

ORG16 : Methanolic Extraction of Soils for Purge and Trap - (USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.

ORG17A : Tumbler Extraction of Solids (Option A - Concentrating) - In-house, Mechanical agitation (tumbler). 20g of sample, Na2SO4 and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ORG17B : Tumbler Extraction of Solids (Option B - Non-concentrating) - In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.

Analytical Methods

EA055-103 : Moisture Content - A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (1999) Schedule B(3) (Method 102)

EG005T : Total Metals by ICP-AES - (APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)

EG035T : Total Mercury by FIMS - AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)

EP068 : Pesticides by GCMS - (USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)

EP071 : TPH - Semivolatile Fraction - (USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)

EP075(SIM) : PAH/Phenols (SIM) - (USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)

EP080 : TPH Volatiles/BTEX - (USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)

ALS Environmental

QUALITY CONTROL REPORT

Client	:	**OTEK**	**Laboratory**	: Environmental Division Melbourne	**Page**	:	**1 of 13**
Contact	:	MR TOM SANTWYK-ANDERSON	**Contact**	: Paul Loewy			
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182	**Address**	: 4 Westall Rd Springvale VIC Australia 3171	**Work order**	:	**EM0703857**
					Amendment No.	:	
Project	:	3106004	**Quote number**	: EN/018/07	**Date received**	:	**25 May 2007**
Order number	:	30944			**Date issued**	:	**1 Jun 2007**
C-O-C number	:	- Not provided -					
Site	:	WERRIBEE AREA 4					
E-mail	:	tsantwyk-anderson@otek.com.au	**E-mail**	: paul.loewy@alsenviro.com	**No. of samples**		
Telephone	:	9525 5155	**Telephone**	: 61-3-8549 9600	**Received**	:	2
Facsimile	:	9593 8555	**Facsimile**	: 61-3-8549 9601	**Analysed**	:	2

This final report for the ALSE work order reference EM0703857 supersedes any previous reports with this reference.

Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- Laboratory Duplicates (DUP); Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Samples (LCS); Recovery and Acceptance Limits
- Matrix Spikes (MS); Recovery and Acceptance Limits

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatory	Department
Dilani Fernando	Inorganics - NATA 825 (13778 - Melbourne)
Emily Yuen	Organics - NATA 825 (13778 - Melbourne)

Quality Control Report - Laboratory Duplicates (DUP)

The quality control term **Laboratory Duplicate** refers to an intralaboratory split sample randomly selected from the sample batch. Laboratory duplicates provide information on method precision and sample heterogeneity.
- Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations:* ***LOR*** = *Limit of Reporting,* ***RPD*** = *Relative Percent Difference.*
* Indicates failed QC. The permitted ranges for the RPD of Laboratory Duplicates (relative percent deviation) are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting:- Result < 10 times LOR, no limit - Result between 10 and 20 times LOR, 0% - 50% - Result > 20 times LOR, 0% - 20%

Matrix Type: SOIL ***Laboratory Duplicates (DUP) Report***

Laboratory Sample ID	*Client Sample ID*	*Analyte name*	*LOR*	*Original Result*	*Duplicate Result*	*RPD*
EA055: Moisture Content						
EA055: Moisture Content - (QC Lot: 420206)				**%**	**%**	**%**
EM0703840-001	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	8.6	6.9	22.1
EM0703878-001	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	8.1	8.2	1.7
EA055: Moisture Content - (QC Lot: 421159)				**%**	**%**	**%**
EB0705746-055	Anonymous	Moisture Content (dried @ 103°C)	1.0 %	12.4	12.7	1.9
EM0703857-002	IF/QS-2A	Moisture Content (dried @ 103°C)	1.0 %	25.1	24.7	1.5
EG005T: Total Metals by ICP-AES						
EG005T: Total Metals by ICP-AES - (QC Lot: 419960)				**mg/kg**	**mg/kg**	**%**
EM0703857-001	IF/QS-1A	Antimony	5 mg/kg	<5	<5	0.0
		Arsenic	5 mg/kg	<5	<5	0.0
		Barium	10 mg/kg	240	240	0.0
		Beryllium	1 mg/kg	<1	<1	0.0
		Boron	50 mg/kg	50	60	0.0
		Cadmium	1 mg/kg	<1	<1	0.0
		Chromium	2 mg/kg	28	26	6.0
		Cobalt	2 mg/kg	7	11	44.9
		Copper	5 mg/kg	7	9	25.1
		Lead	5 mg/kg	9	8	0.0
		Manganese	5 mg/kg	91	96	6.1
		Molybdenum	2 mg/kg	<2	<2	0.0
		Nickel	2 mg/kg	14	16	14.1
		Selenium	5 mg/kg	<5	<5	0.0
		Tin	5 mg/kg	<5	<5	0.0
		Vanadium	5 mg/kg	29	47	46.3
		Zinc	5 mg/kg	8	8	0.0
EM0703889-006	Anonymous	Antimony	5 mg/kg	<5	<5	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EG005T: Total Metals by ICP-AES - continued						
EG005T: Total Metals by ICP-AES - (QC Lot: 419960) - continued				mg/kg	mg/kg	%
EM0703889-006	Anonymous	Arsenic	5 mg/kg	<5	<5	0.0
		Beryllium	1 mg/kg	1	1	0.0
		Boron	50 mg/kg	70	70	0.0
		Cadmium	1 mg/kg	<1	<1	0.0
		Chromium	2 mg/kg	33	34	4.1
		Cobalt	2 mg/kg	12	13	0.0
		Copper	5 mg/kg	15	15	0.0
		Lead	5 mg/kg	12	12	0.0
		Manganese	5 mg/kg	375	399	6.1
		Molybdenum	2 mg/kg	<2	<2	0.0
		Nickel	2 mg/kg	38	41	7.4
		Selenium	5 mg/kg	<5	<5	0.0
		Tin	5 mg/kg	<5	<5	0.0
		Vanadium	5 mg/kg	54	57	5.4
		Zinc	5 mg/kg	12	13	13.2
EG035T: Total Mercury by FIMS						
EG035T: Total Mercury by FIMS - (QC Lot: 419961)				mg/kg	mg/kg	%
EM0703857-001	IF/QS-1A	Mercury	0.1 mg/kg	<0.1	<0.1	0.0
EP068A: Organochlorine Pesticides (OC)						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135)				mg/kg	mg/kg	%
EM0704001-031	Anonymous	alpha-BHC	0.05 mg/kg	<0.05	<0.05	0.0
		Hexachlorobenzene (HCB)	0.05 mg/kg	<0.05	<0.05	0.0
		beta-BHC	0.05 mg/kg	<0.05	<0.05	0.0
		gamma-BHC	0.05 mg/kg	<0.05	<0.05	0.0
		delta-BHC	0.05 mg/kg	<0.05	<0.05	0.0
		Heptachlor	0.05 mg/kg	<0.05	<0.05	0.0
		Aldrin	0.05 mg/kg	<0.05	<0.05	0.0
		Heptachlor epoxide	0.05 mg/kg	<0.05	<0.05	0.0
		trans-Chlordane	0.05 mg/kg	<0.05	<0.05	0.0

ALS Environmental

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP068A: Organochlorine Pesticides (OC) - continued						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135) - continued				mg/kg	mg/kg	%
EM0704001-031	Anonymous	alpha-Endosulfan	0.05 mg/kg	<0.05	<0.05	0.0
		cis-Chlordane	0.05 mg/kg	<0.05	<0.05	0.0
		Dieldrin	0.05 mg/kg	<0.05	<0.05	0.0
		4,4'-DDE	0.05 mg/kg	<0.05	<0.05	0.0
		Endrin	0.05 mg/kg	<0.05	<0.05	0.0
		beta-Endosulfan	0.05 mg/kg	<0.05	<0.05	0.0
		4,4'-DDD	0.05 mg/kg	<0.05	<0.05	0.0
		Endrin aldehyde	0.05 mg/kg	<0.05	<0.05	0.0
		Endosulfan sulfate	0.05 mg/kg	<0.05	<0.05	0.0
		4,4'-DDT	0.2 mg/kg	<0.2	<0.2	0.0
		Endrin ketone	0.05 mg/kg	<0.05	<0.05	0.0
		Methoxychlor	0.2 mg/kg	<0.2	<0.2	0.0
EM0704003-004	Anonymous	alpha-BHC	0.05 mg/kg	<0.05	----	0.0
		Hexachlorobenzene (HCB)	0.05 mg/kg	<0.05	----	0.0
		beta-BHC	0.05 mg/kg	<0.05	----	0.0
		gamma-BHC	0.05 mg/kg	<0.05	----	0.0
		delta-BHC	0.05 mg/kg	<0.05	----	0.0
		Heptachlor	0.05 mg/kg	<0.05	----	0.0
		Aldrin	0.05 mg/kg	<0.05	----	0.0
		Heptachlor epoxide	0.05 mg/kg	<0.05	----	0.0
		trans-Chlordane	0.05 mg/kg	<0.05	----	0.0
		alpha-Endosulfan	0.05 mg/kg	<0.05	----	0.0
		cis-Chlordane	0.05 mg/kg	<0.05	----	0.0
		Dieldrin	0.05 mg/kg	<0.05	----	0.0
		4,4'-DDE	0.05 mg/kg	<0.05	----	0.0
		Endrin	0.05 mg/kg	<0.05	----	0.0
		beta-Endosulfan	0.05 mg/kg	<0.05	----	0.0
		4,4'-DDD	0.05 mg/kg	<0.05	----	0.0
		Endrin aldehyde	0.05 mg/kg	<0.05	----	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	Client Sample ID	Analyte name	LOR	Original Result	Duplicate Result	RPD
EP068A: Organochlorine Pesticides (OC) - continued						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135) - continued				mg/kg	mg/kg	%
EM0704003-004	Anonymous	Endosulfan sulfate	0.05 mg/kg	<0.05	----	0.0
		4,4'-DDT	0.2 mg/kg	<0.2	----	0.0
		Endrin ketone	0.05 mg/kg	<0.05	----	0.0
		Methoxychlor	0.2 mg/kg	<0.2	----	0.0
EP075(SIM)A: Phenolic Compounds						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 420029)				mg/kg	mg/kg	%
EM0703855-001	Anonymous	Phenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Chlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		3- & 4-Methylphenol	1.0 mg/kg	<1.0	<1.0	0.0
		2-Nitrophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dimethylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,6-Dichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,6-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	<0.5	0.0
		Pentachlorophenol	2.0 mg/kg	<2.0	<2.0	0.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029)				mg/kg	mg/kg	%
EM0703855-001	Anonymous	Naphthalene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthylene	0.5 mg/kg	<0.5	<0.5	0.0
		Acenaphthene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluorene	0.5 mg/kg	<0.5	<0.5	0.0
		Phenanthrene	0.5 mg/kg	<0.5	<0.5	0.0
		Anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Benz(a)anthracene	0.5 mg/kg	<0.5	<0.5	0.0

Matrix Type: SOIL

Laboratory Duplicates (DUP) Report

Laboratory Sample ID	*Client Sample ID*	*Analyte name*	*LOR*	*Original Result*	*Duplicate Result*	*RPD*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029) - continued				**mg/kg**	**mg/kg**	**%**
EM0703855-001	Anonymous	Chrysene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(b)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(k)fluoranthene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(a)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Indeno(1,2,3,cd)pyrene	0.5 mg/kg	<0.5	<0.5	0.0
		Dibenz(a,h)anthracene	0.5 mg/kg	<0.5	<0.5	0.0
		Benzo(g,h,i)perylene	0.5 mg/kg	<0.5	<0.5	0.0
EP080/071: Total Petroleum Hydrocarbons						
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420019)				**mg/kg**	**mg/kg**	**%**
EM0703879-001	Anonymous	C6 - C9 Fraction	10 mg/kg	188	213	12.1
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420028)				**mg/kg**	**mg/kg**	**%**
EM0703855-001	Anonymous	C10 - C14 Fraction	50 mg/kg	<50	<50	0.0
		C15 - C28 Fraction	100 mg/kg	<100	<100	0.0
		C29 - C36 Fraction	100 mg/kg	<100	<100	0.0

Quality Control Report - Method Blank (MB) and Laboratory Control Samples (LCS)

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC type is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a known, interference free matrix spiked with target analytes or certified reference material. The purpose of this QC type is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of actual laboratory data. Flagged outliers on control limits for inorganics tests may be within the NEPM specified data quality objective of recoveries in the range of 70 to 130%. Where this occurs, no corrective action is taken. Abbreviations: LOR = Limit of reporting.

Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

		Method blank result	*Actual Results*		*Recovery Limits*	
			Spike concentration	*Spike Recovery*	*Dynamic Recovery Limits*	
Analyte name	*LOR*			*LCS*	*Low*	*High*
EG005T: Total Metals by ICP-AES						
EG005T: Total Metals by ICP-AES - (QC Lot: 419960)		mg/kg	mg/kg	%	%	%
Antimony	5 mg/kg	<5	----	----	----	----
Arsenic	5 mg/kg	----	13.6	96.1	85.9	126
	5 mg/kg	<5	----	----	----	----
Barium	10 mg/kg	----	139	108	86.6	123
	10 mg/kg	<10	----	----	----	----
Beryllium	1 mg/kg	<1	----	----	----	----
Boron	50 mg/kg	<50	----	----	----	----
Cadmium	1 mg/kg	----	2.8	103	86.8	123
	1 mg/kg	<1	----	----	----	----
Chromium	2 mg/kg	<2	----	----	----	----
	2 mg/kg	----	60.9	95.4	91.2	119
Cobalt	2 mg/kg	<2	----	----	----	----
Copper	5 mg/kg	<5	----	----	----	----
	5 mg/kg	----	55.1	92.6	90.7	121
Lead	5 mg/kg	<5	----	----	----	----
	5 mg/kg	----	54.9	96.1	91	121
Manganese	5 mg/kg	<5	----	----	----	----
Molybdenum	2 mg/kg	<2	----	----	----	----
Nickel	2 mg/kg	----	55.1	98.0	91.5	118
	2 mg/kg	<2	----	----	----	----
Selenium	5 mg/kg	<5	----	----	----	----
Tin	5 mg/kg	<5	----	----	----	----
Vanadium	5 mg/kg	<5	----	----	----	----
Zinc	5 mg/kg	----	105	91.8	85.8	118
	5 mg/kg	<5	----	----	----	----

Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	*LOR*	*Method blank result*	*Actual Results*		*Recovery Limits*	
			Spike concentration	*Spike Recovery*	*Dynamic Recovery Limits*	
				LCS	*Low*	*High*
EG035T: Total Mercury by FIMS						
EG035T: Total Mercury by FIMS - (QC Lot: 419961)		mg/kg	mg/kg	%	%	%
Mercury	0.1 mg/kg	<0.1	----	----	----	----
	0.1 mg/kg	----	1.47	81.9	71.9	119
EP068A: Organochlorine Pesticides (OC)						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135)		mg/kg	mg/kg	%	%	%
4,4'-DDD	0.05 mg/kg	----	0.25	103	60	120
	0.05 mg/kg	<0.05	----	----	59.5	117
4,4'-DDE	0.05 mg/kg	<0.05	----	----	57.3	124
	0.05 mg/kg	----	0.25	105	60	120
4,4'-DDT	0.2 mg/kg	<0.2	----	----	54.6	125
	0.2 mg/kg	----	0.25	113	60	120
Aldrin	0.05 mg/kg	<0.05	----	----	59.2	120
	0.05 mg/kg	----	0.25	122	60	120
alpha-BHC	0.05 mg/kg	<0.05	----	----	58.9	121
	0.05 mg/kg	----	0.25	108	60	120
alpha-Endosulfan	0.05 mg/kg	----	0.25	105	60	120
	0.05 mg/kg	<0.05	----	----	61.4	119
beta-BHC	0.05 mg/kg	<0.05	----	----	65.0	121
	0.05 mg/kg	----	0.25	110	60	120
beta-Endosulfan	0.05 mg/kg	----	0.25	109	60	120
	0.05 mg/kg	<0.05	----	----	66.4	117
cis-Chlordane	0.05 mg/kg	----	0.25	104	60	120
	0.05 mg/kg	<0.05	----	----	59.1	118
delta-BHC	0.05 mg/kg	<0.05	----	----	60.1	120
	0.05 mg/kg	----	0.25	105	60	120
Dieldrin	0.05 mg/kg	<0.05	----	----	61.3	122
	0.05 mg/kg	----	0.25	97.7	60	120
Endosulfan sulfate	0.05 mg/kg	----	0.25	104	60	120
	0.05 mg/kg	<0.05	----	----	55.9	119
Endrin	0.05 mg/kg	<0.05	----	----	55.7	124
	0.05 mg/kg	----	0.25	108	60	120

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Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP068A: Organochlorine Pesticides (OC) - continued						
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135) - continued		mg/kg	mg/kg	%	%	%
Endrin aldehyde	0.05 mg/kg	----	0.25	97.6	60	120
	0.05 mg/kg	<0.05	----	----	50.4	125
Endrin ketone	0.05 mg/kg	<0.05	----	----	54.2	119
	0.05 mg/kg	----	0.25	105	60	120
gamma-BHC	0.05 mg/kg	<0.05	----	----	60.1	119
	0.05 mg/kg	----	0.25	107	60	120
Heptachlor	0.05 mg/kg	<0.05	----	----	51.0	128
	0.05 mg/kg	----	0.25	109	60	120
Heptachlor epoxide	0.05 mg/kg	----	0.25	104	60	120
	0.05 mg/kg	<0.05	----	----	63.5	117
Hexachlorobenzene (HCB)	0.05 mg/kg	<0.05	----	----	60.4	117
	0.05 mg/kg	----	0.25	108	60	120
Methoxychlor	0.2 mg/kg	----	0.25	117	60	120
	0.2 mg/kg	<0.2	----	----	44.4	128
trans-Chlordane	0.05 mg/kg	<0.05	----	----	58.0	121
	0.05 mg/kg	----	0.25	105	60	120
EP075(SIM)A: Phenolic Compounds						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 420029)		mg/kg	mg/kg	%	%	%
2,4,5-Trichlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	89.3	71.8	123
2,4,6-Trichlorophenol	0.5 mg/kg	----	10	86.9	65.4	126
	0.5 mg/kg	<0.5	----	----	----	----
2,4-Dichlorophenol	0.5 mg/kg	----	10	88.9	74.5	120
	0.5 mg/kg	<0.5	----	----	----	----
2,4-Dimethylphenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	90.3	71.5	126
2,6-Dichlorophenol	0.5 mg/kg	----	10	87.9	68.5	129
	0.5 mg/kg	<0.5	----	----	----	----
2-Chlorophenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	89.9	68.4	127

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Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP075(SIM)A: Phenolic Compounds - continued						
EP075(SIM)A: Phenolic Compounds - (QC Lot: 420029) - continued		mg/kg	mg/kg	%	%	%
2-Methylphenol	0.5 mg/kg	----	10	89.8	82.2	120
	0.5 mg/kg	<0.5	----	----	----	----
2-Nitrophenol	0.5 mg/kg	----	10	88.4	59.6	129
	0.5 mg/kg	<0.5	----	----	----	----
3- & 4-Methylphenol	1.0 mg/kg	<1.0	----	----	----	----
	1.0 mg/kg	----	20	90.6	76.8	123
4-Chloro-3-Methylphenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	89.8	72.6	122
Pentachlorophenol	1.0 mg/kg	<1.0	----	----	----	----
	1.0 mg/kg	----	10	71.4	20.2	104
Phenol	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	91.5	77.5	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029)		mg/kg	mg/kg	%	%	%
Acenaphthene	0.5 mg/kg	----	10	91.3	75.0	123
	0.5 mg/kg	<0.5	----	----	----	----
Acenaphthylene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	91.3	77.4	122
Anthracene	0.5 mg/kg	----	10	89.7	80.4	118
	0.5 mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	88.6	71.6	120
Benzo(a)pyrene	0.5 mg/kg	----	10	88.5	70.5	122
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(b)fluoranthene	0.5 mg/kg	----	10	89.1	68.0	126
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(g,h,i)perylene	0.5 mg/kg	----	10	91.0	67.6	119
	0.5 mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	0.5 mg/kg	----	10	89.7	68.8	126
	0.5 mg/kg	<0.5	----	----	----	----

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Matrix Type: SOIL

Method Blank (MB) and Laboratory Control Samples (LCS) Report

Analyte name	LOR	Method blank result	Actual Results: Spike concentration	Actual Results: Spike Recovery LCS	Recovery Limits: Dynamic Recovery Limits Low	Recovery Limits: Dynamic Recovery Limits High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - continued						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029) - continued		mg/kg	mg/kg	%	%	%
Chrysene	0.5 mg/kg	----	10	93.6	72.4	122
	0.5 mg/kg	<0.5	----	----	----	----
Dibenz(a,h)anthracene	0.5 mg/kg	----	10	91.3	66.3	121
	0.5 mg/kg	<0.5	----	----	----	----
Fluoranthene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	90.4	74.7	122
Fluorene	0.5 mg/kg	----	10	90.3	77.8	120
	0.5 mg/kg	<0.5	----	----	----	----
Indeno(1,2,3,cd)pyrene	0.5 mg/kg	----	10	91.6	66.3	125
	0.5 mg/kg	<0.5	----	----	----	----
Naphthalene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	91.3	70.2	124
Phenanthrene	0.5 mg/kg	<0.5	----	----	----	----
	0.5 mg/kg	----	10	91.0	65.3	126
Pyrene	0.5 mg/kg	----	10	90.3	74.8	120
	0.5 mg/kg	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420019)		mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	10 mg/kg	<10	----	----	----	----
	10 mg/kg	----	32	95.0	81	123
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420028)		mg/kg	mg/kg	%	%	%
C10 - C14 Fraction	50 mg/kg	<50	----	----	----	----
	50 mg/kg	----	606	87.5	69	123
C15 - C28 Fraction	100 mg/kg	----	1460	101	69	127
	100 mg/kg	<100	----	----	----	----
C29 - C36 Fraction	100 mg/kg	----	342	84.0	70	130
	100 mg/kg	<100	----	----	----	----

Quality Control Report - Matrix Spikes (MS)

The quality control term **Matrix Spike (MS)** refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC type is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQO's). 'Ideal' recovery ranges stated may be waived in the event of sample matrix interferences. - Anonymous - Client Sample IDs refer to samples which are not specifically part of this work order but formed part of the QC process lot. *Abbreviations:* ***LOR*** *= Limit of Reporting,* ***RPD*** *= Relative Percent Difference.*

* Indicates failed QC

Matrix Type: SOIL

Matrix Spike (MS) Report

					Actual Results		*Recovery Limits*	
					Sample Result	*Spike Recovery*	*Static Limits*	
Analyte name	*Laboratory Sample ID*	*Client Sample ID*	*LOR*	*Spike Concentration*		*MS*	*Low*	*High*
EG005T: Total Metals by ICP-AES								
EG005T: Total Metals by ICP-AES - (QC Lot: 419960)				mg/kg	mg/kg	%	%	%
Arsenic	EM0703878-001	Anonymous	5 mg/kg	50	<5	107	70	130
Barium			10 mg/kg	50	30	107	70	130
Beryllium			1 mg/kg	50	<1	114	70	130
Cadmium			1 mg/kg	50	<1	103	70	130
Chromium			2 mg/kg	50	15	99.6	70	130
Copper			5 mg/kg	50	7	106	70	130
Lead			5 mg/kg	50	6	101	70	130
Manganese			5 mg/kg	50	248	* Not Determined	70	130
Molybdenum			2 mg/kg	50	<2	89.5	70	130
Nickel			2 mg/kg	50	7	103	70	130
Selenium			5 mg/kg	50	<5	110	70	130
Vanadium			5 mg/kg	50	19	101	70	130
Zinc			5 mg/kg	50	10	102	70	130
EG035T: Total Mercury by FIMS								
EG035T: Total Mercury by FIMS - (QC Lot: 419961)				mg/kg	mg/kg	%	%	%
Mercury	EM0703878-001	Anonymous	0.1 mg/kg	5.0	<0.1	85.9	70	130
EP068A: Organochlorine Pesticides (OC)								
EP068A: Organochlorine Pesticides (OC) - (QC Lot: 421135)				mg/kg	mg/kg	%	%	%
gamma-BHC	EM0704001-031	Anonymous	0.05 mg/kg	0.25	<0.05	65.0	70	130
Heptachlor			0.05 mg/kg	0.25	<0.05	72.8	70	130
Aldrin			0.05 mg/kg	0.25	<0.05	86.6	70	130
Dieldrin			0.05 mg/kg	0.25	<0.05	73.2	70	130
Endrin			0.05 mg/kg	0.25	<0.05	57.4	70	130
4,4'-DDT			0.20 mg/kg	0.25	<0.2	74.2	70	130
EP075(SIM)A: Phenolic Compounds								

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Matrix Type: SOIL

Matrix Spike (MS) Report

					Actual Results		Recovery Limits	
					Sample Result	Spike Recovery	Static Limits	
Analyte name	***Laboratory Sample ID***	***Client Sample ID***	***LOR***	***Spike Concentration***		***MS***	***Low***	***High***
EP075(SIM)A: Phenolic Compounds - continued								
EP075(SIM)A: Phenolic Compounds - (QC Lot: 420029)				mg/kg	mg/kg	%	%	%
Phenol	EM0703857-002	IF/QS-2A	0.5 mg/kg	10	<0.5	86.1	70	130
2-Chlorophenol			0.5 mg/kg	10	<0.5	86.3	70	130
2-Nitrophenol			0.5 mg/kg	10	<0.5	83.1	70	130
4-Chloro-3-Methylphenol			0.5 mg/kg	10	<0.5	81.1	70	130
Pentachlorophenol			2.0 mg/kg	10	<2.0	51.2	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - (QC Lot: 420029)				mg/kg	mg/kg	%	%	%
Acenaphthene	EM0703857-002	IF/QS-2A	0.5 mg/kg	10	<0.5	82.6	70	130
Pyrene			0.5 mg/kg	10	<0.5	87.2	70	130
EP080/071: Total Petroleum Hydrocarbons								
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420019)				mg/kg	mg/kg	%	%	%
C6 - C9 Fraction	EM0703893-002	Anonymous	10 mg/kg	28	<10	75.4		
EP080/071: Total Petroleum Hydrocarbons - (QC Lot: 420028)				mg/kg	mg/kg	%	%	%
C10 - C14 Fraction	EM0703857-001	IF/QS-1A	50 mg/kg	606	<50	92.8	60	130
C15 - C28 Fraction			100 mg/kg	1460	<100	103	60	130
C29 - C36 Fraction			100 mg/kg	342	<100	81.9	60	130

ALS Environmental

CERTIFICATE OF ANALYSIS

Client	: **OTEK**	*Laboratory*	: **Environmental Division Melbourne**	*Page*	: **1 of 6**
Contact	: **MR TOM SANTWYK-ANDERSON**	*Contact*	: **Paul Loewy**	*Work Order*	: **EM0703857**
Address	: **LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182**	*Address*	: **4 Westall Rd Springvale VIC Australia 3171**		
E-mail	: **tsantwyk-anderson@otek.com.au**	*E-mail*	: **paul.loewy@alsenviro.com**		
Telephone	: **9525 5155**	*Telephone*	: **61-3-8549 9600**		
Facsimile	: **9593 8555**	*Facsimile*	: **61-3-8549 9601**		
Project	: **3106004**	*Quote number*	: **EN/018/07**	*Date received*	: **25 May 2007**
Order number	: **30944**			*Date issued*	: **1 Jun 2007**
C-O-C number	: **- Not provided -**			*No. of samples*	- *Received* : **2**
Site	: **WERRIBEE AREA 4**				*Analysed* : **2**

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatory	*Position*	*Department*
Dilani Fernando	**Senior Inorganic Instrument Chemist**	**Inorganics - NATA 825 (13778 - Melbourne)**
Emily Yuen	**Senior Organic Instrument Chemist**	**Organics - NATA 825 (13778 - Melbourne)**

ALS Environmental

Comments

This report for the ALSE reference EM0703857 supersedes any previous reports with this reference. Results apply to the samples as submitted. All pages of this report have been checked and approved for release.

This report contains the following information:

- **Analytical Results for Samples Submitted**
- **Surrogate Recovery Data**

The analytical procedures used by ALS Environmental have been developed from established internationally-recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported herein. Reference methods from which ALSE methods are based are provided in parenthesis.

When moisture determination has been performed, results are reported on a dry weight basis. When a reported 'less than' result is higher than the LOR, this may be due to primary sample extracts/digestion dilution and/or insuffient sample amount for analysis. Surrogate Recovery Limits are static and based on USEPA SW846 or ALS-QWI/EN38 (in the absence of specified USEPA limits). Where LOR of reported result differ from standard LOR, this may be due to high moisture, reduced sample amount or matrix interference. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number, LOR = Limit of Reporting. * Indicates failed Surrogate Recoveries.

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Analytical Results

	Client Sample ID :	IF/QS-1A	IF/QS-2A			
	Sample Matrix Type / Description :	SOIL	SOIL			
	Sample Date / Time :	23 May 2007 15:00	23 May 2007 15:00			
	Laboratory Sample ID :	EM0703857-001	EM0703857-002			
Analyte	CAS number	LOR	Units			
EA055: Moisture Content						
Moisture Content (dried @ 103°C)		1.0	%	25.1	25.1	
EG005T: Total Metals by ICP-AES						
Antimony	7440-36-0	5	mg/kg	<5	----	
Arsenic	7440-38-2	5	mg/kg	<5	----	
Barium	7440-39-3	10	mg/kg	240	----	
Beryllium	7440-41-7	1	mg/kg	<1	----	
Boron	7440-42-8	50	mg/kg	50	----	
Cadmium	7440-43-9	1	mg/kg	<1	----	
Chromium	7440-47-3	2	mg/kg	28	----	
Cobalt	7440-48-4	2	mg/kg	7	----	
Copper	7440-50-8	5	mg/kg	7	----	
Lead	7439-92-1	5	mg/kg	9	----	
Manganese	7439-96-5	5	mg/kg	91	----	
Molybdenum	7439-98-7	2	mg/kg	<2	----	
Nickel	7440-02-0	2	mg/kg	14	----	
Selenium	7782-49-2	5	mg/kg	<5	----	
Tin	7440-31-5	5	mg/kg	<5	----	
Vanadium	7440-62-2	5	mg/kg	29	----	
Zinc	7440-66-6	5	mg/kg	8	----	
EG035T: Total Mercury by FIMS						
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	
EP068A: Organochlorine Pesticides (OC)						
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	
4.4'-DDE	72-55-9	0.05	mg/kg	----	<0.05	
Endrin	72-20-8	0.05	mg/kg	----	<0.05	
beta-Endosulfan	33213-65-9	0.05	mg/kg	----	<0.05	

ALS Environmental

Analytical Results

	Client Sample ID :	IF/QS-1A	IF/QS-2A			
	Sample Matrix Type / Description :	SOIL	SOIL			
	Sample Date / Time :	23 May 2007 15:00	23 May 2007 15:00			
	Laboratory Sample ID :	EM0703857-001	EM0703857-002			
Analyte	CAS number	LOR	Units			
EP068A: Organochlorine Pesticides (OC)						
4.4'-DDD	72-54-8	0.05	mg/kg	----	<0.05	
Endrin aldehyde	7421-93-4	0.05	mg/kg	----	<0.05	
Endosulfan sulfate	1031-07-8	0.05	mg/kg	----	<0.05	
4.4'-DDT	50-29-3	0.2	mg/kg	----	<0.2	
Endrin ketone	53494-70-5	0.05	mg/kg	----	<0.05	
Methoxychlor	72-43-5	0.2	mg/kg	----	<0.2	
EP075(SIM)A: Phenolic Compounds						
Phenol	108-95-2	0.5	mg/kg	----	<0.5	
2-Chlorophenol	95-57-8	0.5	mg/kg	----	<0.5	
2-Methylphenol	95-48-7	0.5	mg/kg	----	<0.5	
3- & 4-Methylphenol	1319-77-3	1.0	mg/kg	----	<1.0	
2-Nitrophenol	88-75-5	0.5	mg/kg	----	<0.5	
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	----	<0.5	
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	----	<0.5	
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	----	<0.5	
4-Chloro-3-Methylphenol	59-50-7	0.5	mg/kg	----	<0.5	
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	----	<0.5	
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	----	<0.5	
Pentachlorophenol	87-86-5	2.0	mg/kg	----	<2.0	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	

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Analytical Results

	Client Sample ID :	IF/QS-1A	IF/QS-2A			
	Sample Matrix Type / Description :	SOIL	SOIL			
	Sample Date / Time :	23 May 2007 15:00	23 May 2007 15:00			
	Laboratory Sample ID :	EM0703857-001	EM0703857-002			
Analyte	CAS number	LOR	Units			
EP080/071: Total Petroleum Hydrocarbons						
C6 - C9 Fraction		10	mg/kg	<10	----	
C10 - C14 Fraction		50	mg/kg	<50	----	
C15 - C28 Fraction		100	mg/kg	<100	----	
C29 - C36 Fraction		100	mg/kg	<100	----	
EP068S: Organochlorine Pesticide Surrogate						
Dibromo-DDE	21655-73-2	0.1	%	----	96.5	
EP068T: Organophosphorus Pesticide Surrogate						
DEF	78-48-8	0.1	%	----	95.4	
EP075(SIM)S: Phenolic Compound Surrogates						
Phenol-d6	13127-88-3	0.1	%	95.5	96.2	
2-Chlorophenol-D4	93951-73-6	0.1	%	94.6	95.1	
2.4.6-Tribromophenol	118-79-6	0.1	%	84.7	80.9	
EP075(SIM)T: PAH Surrogates						
2-Fluorobiphenyl	321-60-8	0.1	%	96.6	97.2	
Anthracene-d10	1719-06-8	0.1	%	91.0	91.0	
4-Terphenyl-d14	1718-51-0	0.1	%	93.1	92.2	
EP080S: TPH(V)/BTEX Surrogates						
1.2-Dichloroethane-D4	17060-07-0	0.1	%	83.6	----	
Toluene-D8	2037-26-5	0.1	%	88.9	----	
4-Bromofluorobenzene	460-00-4	0.1	%	82.0	----	

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Surrogate Control Limits

Matrix Type: SOIL - Surrogate Control Limits ***Surrogate Control Limits***

Method name	*Analyte name*	*Lower Limit*	*Upper Limit*
EP068: Pesticides by GCMS			
EP068S: Organochlorine Pesticide Surrogate	Dibromo-DDE		
EP068T: Organophosphorus Pesticide Surrogate	DEF		
EP075(SIM): PAH/Phenols (SIM)			
EP075(SIM)S: Phenolic Compound Surrogates	Phenol-d6		
	2-Chlorophenol-D4		
	2,4,6-Tribromophenol		
EP075(SIM)T: PAH Surrogates	2-Fluorobiphenyl		
	Anthracene-d10		
	4-Terphenyl-d14		
EP080: TPH Volatiles/BTEX			
EP080S: TPH(V)/BTEX Surrogates	1,2-Dichloroethane-D4	70	130
	Toluene-D8	70	130
	4-Bromofluorobenzene	70	130

AUSTRALIAN LABORATORY SERVICES PTY LTD ABN 84 009 936 029
4 Westall Rd Springvale VIC 3171 Australia
Telephone: 61-3-8549 9600 Facsimile: 61-3-8549 9601 http://www.alsenviro.com/

ALS Environmental

SAMPLE RECEIPT NOTIFICATION (SRN)

Comprehensive report

Client Details

Client	:	**OTEK**
Contact	:	**MR TOM SANTWYK-ANDERSON**
Address	:	LEVEL 1, 222 ST KILDA RD ST KILDA VIC AUSTRALIA 3182
Project	:	**3106004**
Order number	:	**30944**
C-O-C Number	:	**- Not provided -**
Site	:	**WERRIBEE AREA 4**
Sampler	:	**TSA**
E-mail	:	tsantwyk-anderson@otek.com.au
Telephone	:	9525 5155
Facsimile	:	9593 8555

Laboratory Details

Laboratory	:	**Environmental Division Melbourne**
Manager	:	**Paul Loewy**
Address	:	4 Westall Rd Springvale VIC Australia 3171
Quote number	:	ES20070065
Work order	:	**EM0703857**
E-mail	:	paul.loewy@alsenviro.com
Telephone	:	61-3-8549 9600
Facsimile	:	61-3-8549 9601

Dates

Date Samples Received	:	25 May 2007	**SRA Issue Date**	:	30 May 2007
Scheduled Reporting Date	:	**1 Jun 2007**	**Client Requested Date**	:	30 May 2007

Delivery Details

Mode of Delivery	:	Carrier.	**Temperature**	:	----
No. of coolers/boxes	:	1	**No. of samples** - **Received**		2
Security Seal	:	Intact.	- **Analysed**		2

Comments

- **Samples received in appropriately pretreated and preserved containers.**
- **Please direct any queries related to sample condition / numbering / breakages to Peter Ravlic.**
- **Analytical work for this work order will be conducted at ALSE Melbourne.**
- **Sample(s) have been received within recommended holding times**

- Sample Disposal - Aqueous (14 days), Solid (90 days) from date of completion of work order.
- When the sampling time is not supplied on the COC documentation, ALSE defaults the sampling time to that of the COC 'relinquishment' time (if supplied). If this also is not supplied, ALSE defaults the sampling time to the 'time of receipt at Laboratory'.

Client	: OTEK	**Work Order**	: EM0703857
Project	: 3106004	**ALS Quote Reference**	: ES20070065

Summary of Sample(s) / Container(s) and Requested Analysis

Some items described below may be part of a laboratory process neccessary for the execution of client requested tasks. Packages may contain additional analyses, such as moisture and preparation tasks, that form an implicit part of that package.

ALS Sample ID.	Client Sample ID - Sample Date	**Requested Analysis**									
		EA055-103 - SOIL Moisture Content	**EG005T (solids) - SOIL** Total Metals by ICP-AES	**EP068A (solids) - SOIL** Organochlorine Pesticides by GCMS	**EP075 SIM PAH only - SOIL** SIM - PAH only	**EP075 SIM Phenols only - SOIL** SIM - Phenols only	**S-03 - SOIL** 13 Metals (NEPM Suite - incl. Digestion)	**TPH only - SOIL** TPH (C6 - C36)			
EM0703857-001	**IF/QS-1A - 23 May 2007**	⌋	⌋		⌋		⌋	⌋			
EM0703857-002	**IF/QS-2A - 23 May 2007**	⌋		⌋		⌋					
	Total(s) :	**2**	**1**	**1**	**1**	**1**	**1**	**1**			

Client	: OTEK	**Work Order**	: EM0703857
Project	: 3106004	**ALS Quote Reference**	: ES20070065

ALS Environmental

Requested Reports

l	**MR TOM SANTWYK-ANDERSON**		
-	A4 - AU Quality Control Report - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Interpretive Quality Control Report - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Certificate of Analysis - NEPM format	Email	tsantwyk-anderson@otek.com.au
-	EDI Format - ENMRG	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Sample Receipt Notification - Comprehensive format	Email	tsantwyk-anderson@otek.com.au
-	Default - Chain of Custody	Email	tsantwyk-anderson@otek.com.au
-	A4 - AU Tax Invoice	Email	tsantwyk-anderson@otek.com.au
l	**MS CHANTEL WEBBER**		
-	A4 - AU Tax Invoice	Email	chantelwebber@otek.com.au
l	**RESULTS/INVOICE**		
-	A4 - AU Certificate of Analysis - NEPM format	Email	vicreception@otek.com.au
-	A4 - AU Quality Control Report - NEPM format	Email	igulec@otek.com.au
-	A4 - AU Interpretive Quality Control Report - NEPM format	Email	vicreception@otek.com.au
-	A4 - AU Certificate of Analysis - NEPM format	Email	igulec@otek.com.au
-	A4 - AU Quality Control Report - NEPM format	Email	vicreception@otek.com.au
-	A4 - AU Interpretive Quality Control Report - NEPM format	Email	igulec@otek.com.au
-	EDI Format - ENMRG	Email	igulec@otek.com.au
-	EDI Format - ENMRG	Email	vicreception@otek.com.au
-	Default - Chain of Custody	Email	igulec@otek.com.au
-	A4 - AU Sample Receipt Notification - Comprehensive format	Email	vicreception@otek.com.au
-	A4 - AU Sample Receipt Notification - Comprehensive format	Email	igulec@otek.com.au
-	Default - Chain of Custody	Email	vicreception@otek.com.au
-	A4 - AU Tax Invoice	Email	vicreception@otek.com.au
-	A4 - AU Tax Invoice	Email	igulec@otek.com.au

Sample Container(s) / Preservation Non-Compliance Log

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

l **No sample container / preservation non-compliance exist.**

LAB	ALS	Page 1 of	
ADDRESS	4 Westal Rd, Springvale		
LAB CONTACT	Paul Lowie		
PHONE	9549 9600		

Chain of Custody & Analysis Request

OTEK Australia Pty Ltd
Lvl 1, 222 St Kilda Road
St Kilda VIC 3182
ACN 054 371 596

Ph: (03) 9525 5155
Fax: (03) 9593 8555

Please email results & invoice to
vicreception@otek.com.au &
_____@otek.com.au

OTEK AUSTRALIA PTY LTD

PROJECT #	PROJECT NAME
3106004	Werribee Area 4

COLLECTORS NAME	LAB JOB #
Tom Santwyk-Anderson tsantwyk-anderson@otek.com.au	

PRELIM. RESULTS BY: ☐ VERBAL ☑ FAX ☑ EMAIL

FINAL REPORT BY: 30.5.07

LAB QUOTE REF: ME/022b/06 | OTEK PO No.: 30944

REMARKS

SAMPLE ID	DEPTH (metres)	LAB #	MATRIX: WATER	MATRIX: SOIL	MATRIX: AIR	MATRIX: SLUDGE	PRESERVATION METHOD: ICE	PRESERVATION METHOD: ACIDIFIED	PRESERVATION METHOD: OTHER	PRESERVATION METHOD: NONE	SAMPLING DATE	No. OF CONTAINERS	ANALYSIS REQUIRED & METHOD CODE: TPH (C_6-C_{36})/BTEX	TPH (C_6-C_{36})/BTEX/Pb	TPH (C_6-C_{36})	HOLD	BTEX (Purge & Trap)	Lead	PAH	Benzo(a)pyrene to 0.01µg/l	Total Phenols	EPA Screen	Phenols (Speciated)	Metals (As, Ba, Be, B, Cd, Cr, Co, Cu, Pb, Mn, Hg, Mo, Ni, Sb, Se, Sn, V, Zn)	Phosphates & Nitrates	OCs/OPs	Asbestos	Ecoli	pH
IF/QS-1A	-	1		X			X				23.5.07	1			X				X					X					
IF/QS-2A	-	2		X			X				"	1				X							X						
This Page				2	0	0	2	0	0	0	0	2	0	0	1	1	0	0	1	0	0	0	1	1	0	0	0	0	0

Environmental Division
Melbourne
Work Order
EM0703857

Telephone : 61-3-8549 9600

Additional Comments:
48 hr turnaround requested, Please provide electronic results in ESDAT format

Relinquished by:	Date: 23.5.07	Time: 13:40	Received by: OLA HADDARA	Date: 23/5	Time: 1.43pm
Relinquished by: IAN, LABMASTER	Date: 24/5/07	Time: 9 AM	Received by:	Date:	Time:

Custody Seals Intact? Yes / No / NA

Samples Received Chilled? Yes / No

PLEASE FORWARD SAMPLES TO ALS

GHD

180 Lonsdale Street
Melbourne, Victoria 3000
T: (03) 8687 8000 F: (03) 8687 8111 E: melmail@ghd.com.au

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