



This report is consistent with the analytical procedures and reporting recommendations in the Western Australia Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia and it also satisfies the requirements of the current NEPM Guidelines. NATA Accreditation does not cover the performance of this service (NATA ISO/IEC17025 AUG 2014).

Disclaimers;

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos, as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation only covers the qualitative part of the results reported. This weight disclaimer also covers weight / weight percentages if given.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos types detected in soil/dust.

*** denotes asbestos detected in ACM in bonded form.**

denotes friable asbestos as soft fibro plaster and/ or highly weathered ACM that will easily crumble.

The results contained in this report relate only to the sample/s submitted for testing. Australian Safer Environment & Technology accepts no responsibility for whether or not the submitted sample/s is/are representative. Results indicating "No asbestos detected" indicates a reporting limit specified in AS4964 -2004 which is 0.1g/ Kg (0.01%). Any amounts detected at assumed lower level than that would be reported, however those assumed lower levels may be treated as "No asbestos detected" as specified and recommended by A4964-2004. Trace / respirable level asbestos will be reported only when detected and trace analysis have been performed on each sample as required by AS4964-2004. When loose asbestos fibres/ fibre bundles are detected and reported that means they are larger handpicked fibres/ fibre bundles, and they do not represent respirable fibres. Dust/soil samples are always subjected to trace analysis except where the amounts involved are extremely minute and trace analysis is not possible to be carried out. When trace analysis is not performed on dust samples it will be indicated in the report that trace analysis has not been carried out due to the volume of the sample being extremely minute.

Estimation of asbestos weights involves the use of following assumptions;

Volume of each kind of Asbestos present in broken edges have been visually estimated and its been assumed that volumes remain similar throughout the binding matrix and those volumes are only approximate and not exact. Material densities have been assumed to be similar to commonly found similar materials and may not be exact.

All samples indicating "No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

CERTIFICATE OF ANALYSIS 205112

Client Details

Client	ERM SERVICES AUSTRALIA PTY LTD
Attention	Matthew Junghans, Tristan Rodrigues
Address	Unit 11 Macquarie Link, 277 Lane Cove Rd, Macquarie Park, NSW, 2113

Sample Details

Your Reference	<u>0475405, 17-29 May St, Auburn</u>
Number of Samples	10 Soil
Date samples received	08/11/2018
Date completed instructions received	08/11/2018

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	15/11/2018
Date of Issue	15/11/2018
NATA Accreditation Number 2901. This document shall not be reproduced except in full. Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Results Approved By

Leon Ow, Chemist
Long Pham, Team Leader, Metals
Nancy Zhang, Assistant Lab Manager
Nick Sarlamis, Inorganics Supervisor
Steven Luong, Senior Chemist

Authorised By



Jacinta Hurst, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil

Our Reference		205112-1	205112-2	205112-3	205112-4	205112-5
Your Reference	UNITS	M1	M2	M3	M4	M5
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	12/11/2018	12/11/2018	12/11/2018	12/11/2018	12/11/2018
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	96	96	92	97	94

vTRH(C6-C10)/BTEXN in Soil

Our Reference		205112-6	205112-7	205112-8	205112-9	205112-10
Your Reference	UNITS	M6	M7	M8	M9	M10
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	12/11/2018	12/11/2018	12/11/2018	12/11/2018	12/11/2018
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	88	92	93	91	88

svTRH (C10-C40) in Soil

Our Reference		205112-1	205112-2	205112-3	205112-4	205112-5
Your Reference	UNITS	M1	M2	M3	M4	M5
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	10/11/2018	10/11/2018	10/11/2018	10/11/2018	10/11/2018
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	72	74	71	70	70

svTRH (C10-C40) in Soil

Our Reference		205112-6	205112-7	205112-8	205112-9	205112-10
Your Reference	UNITS	M6	M7	M8	M9	M10
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	10/11/2018	10/11/2018	10/11/2018	10/11/2018	10/11/2018
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	71	72	70	71	70

PAHs in Soil						
Our Reference		205112-1	205112-2	205112-3	205112-4	205112-5
Your Reference	UNITS	M1	M2	M3	M4	M5
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	12/11/2018	12/11/2018	12/11/2018	12/11/2018	12/11/2018
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	94	90	91	90	85

PAHs in Soil						
Our Reference		205112-6	205112-7	205112-8	205112-9	205112-10
Your Reference	UNITS	M6	M7	M8	M9	M10
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	13/11/2018
Date analysed	-	12/11/2018	12/11/2018	12/11/2018	12/11/2018	13/11/2018
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j,k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	90	93	90	93	101

Organochlorine Pesticides in soil						
Our Reference		205112-2	205112-4	205112-6	205112-8	205112-10
Your Reference	UNITS	M2	M4	M6	M8	M10
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	126	120	110	120	102

Organophosphorus Pesticides						
Our Reference		205112-2	205112-4	205112-6	205112-8	205112-10
Your Reference	UNITS	M2	M4	M6	M8	M10
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	126	120	110	120	102

Client Reference: 0475405, 17-29 May St, Auburn

PCBs in Soil						
Our Reference		205112-2	205112-4	205112-6	205112-8	205112-10
Your Reference	UNITS	M2	M4	M6	M8	M10
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	126	120	110	120	102

Acid Extractable metals in soil

Our Reference		205112-1	205112-2	205112-3	205112-4	205112-5
Your Reference	UNITS	M1	M2	M3	M4	M5
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Arsenic	mg/kg	15	6	<4	10	9
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	3	7	4	3	4
Copper	mg/kg	27	16	13	23	26
Lead	mg/kg	8	17	16	6	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	2	2	1	1
Zinc	mg/kg	12	11	16	11	23

Acid Extractable metals in soil

Our Reference		205112-6	205112-7	205112-8	205112-9	205112-10
Your Reference	UNITS	M6	M7	M8	M9	M10
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Arsenic	mg/kg	28	7	5	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	6	9	7	5	13
Copper	mg/kg	61	21	17	15	9
Lead	mg/kg	10	9	11	7	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	<1	1	2	2	6
Zinc	mg/kg	10	10	17	8	58

Client Reference: 0475405, 17-29 May St, Auburn

Moisture						
Our Reference		205112-1	205112-2	205112-3	205112-4	205112-5
Your Reference	UNITS	M1	M2	M3	M4	M5
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	12/11/2018	12/11/2018	12/11/2018	12/11/2018	12/11/2018
Moisture	%	14	15	14	9.8	15

Moisture						
Our Reference		205112-6	205112-7	205112-8	205112-9	205112-10
Your Reference	UNITS	M6	M7	M8	M9	M10
Date Sampled		06/11/2018	06/11/2018	06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	09/11/2018	09/11/2018	09/11/2018	09/11/2018	09/11/2018
Date analysed	-	12/11/2018	12/11/2018	12/11/2018	12/11/2018	12/11/2018
Moisture	%	15	17	16	15	22

Misc Inorg - Soil				
Our Reference		205112-2	205112-5	205112-9
Your Reference	UNITS	M2	M5	M9
Date Sampled		06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	13/11/2018	13/11/2018	13/11/2018
Date analysed	-	13/11/2018	13/11/2018	13/11/2018
pH 1:5 soil:water	pH Units	5.7	5.8	5.4
Chloride, Cl 1:5 soil:water	mg/kg	100	100	20
Sulphate, SO ₄ 1:5 soil:water	mg/kg	80	120	150
Resistivity in soil*	ohm m	77	70	140

Texture and Salinity*				
Our Reference		205112-2	205112-5	205112-9
Your Reference	UNITS	M2	M5	M9
Date Sampled		06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	13/11/2018	13/11/2018	13/11/2018
Date analysed	-	13/11/2018	13/11/2018	13/11/2018
Electrical Conductivity 1:5 soil:water	µS/cm	130	140	74
Texture Value	-	6.0	6.0	6.0
Texture		HEAVY CLAY	HEAVY CLAY	HEAVY CLAY
ECe	dS/m	<2	<2	<2
Class		NON SALINE	NON SALINE	NON SALINE

CEC				
Our Reference		205112-2	205112-5	205112-9
Your Reference	UNITS	M2	M5	M9
Date Sampled		06/11/2018	06/11/2018	06/11/2018
Type of sample		Soil	Soil	Soil
Date prepared	-	13/11/2018	13/11/2018	13/11/2018
Date analysed	-	13/11/2018	13/11/2018	13/11/2018
Exchangeable Ca	meq/100g	0.4	1.0	0.3
Exchangeable K	meq/100g	0.5	0.3	0.2
Exchangeable Mg	meq/100g	9.0	5.6	3.4
Exchangeable Na	meq/100g	2.8	1.6	0.49
Cation Exchange Capacity	meq/100g	13	8.5	4.4

Method ID	Methodology Summary
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25oC in accordance with APHA 22nd ED 2510 and Rayment & Lyons. Resistivity is calculated from Conductivity.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Alternatively determined by colourimetry/turbidity using Discrete Analyser.
INORG-123	Determined using a "Texture by Feel" method.
Metals-009	Determination of exchangeable cations and cation exchange capacity in soils using 1M Ammonium Chloride exchange and ICP-AES analytical finish.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PCBs" is simply a sum of the positive individual PCBs.

Method ID	Methodology Summary
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

Client Reference: 0475405, 17-29 May St, Auburn

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Date analysed	-			12/11/2018	2	12/11/2018	12/11/2018		12/11/2018	
TRH C ₆ - C ₉	mg/kg	25	Org-016	<25	2	<25	<25	0	115	
TRH C ₆ - C ₁₀	mg/kg	25	Org-016	<25	2	<25	<25	0	115	
Benzene	mg/kg	0.2	Org-016	<0.2	2	<0.2	<0.2	0	109	
Toluene	mg/kg	0.5	Org-016	<0.5	2	<0.5	<0.5	0	112	
Ethylbenzene	mg/kg	1	Org-016	<1	2	<1	<1	0	116	
m+p-xylene	mg/kg	2	Org-016	<2	2	<2	<2	0	118	
o-Xylene	mg/kg	1	Org-016	<1	2	<1	<1	0	118	
naphthalene	mg/kg	1	Org-014	<1	2	<1	<1	0		
Surrogate aaa-Trifluorotoluene	%		Org-016	100	2	96	94	2	109	

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date extracted	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Date analysed	-			10/11/2018	2	10/11/2018	10/11/2018		10/11/2018	
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	2	<50	<50	0	90	
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	2	<100	<100	0	85	
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	2	<100	<100	0	93	
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	2	<50	<50	0	90	
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	2	<100	<100	0	85	
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	2	<100	<100	0	93	
Surrogate o-Terphenyl	%		Org-003	77	2	74	75	1	73	

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Date analysed	-			12/11/2018	2	12/11/2018	12/11/2018		12/11/2018	
Naphthalene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	104	
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0		
Acenaphthene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0		
Fluorene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	107	
Phenanthrene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	112	
Anthracene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0		
Fluoranthene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	103	
Pyrene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	91	
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0		
Chrysene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0	110	
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	2	<0.2	<0.2	0		
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	2	<0.05	<0.05	0	107	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0		
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0		
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	2	<0.1	<0.1	0		
Surrogate p-Terphenyl-d14	%		Org-012	89	2	90	87	3	87	

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Date analysed	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
HCB	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
alpha-BHC	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	107	
gamma-BHC	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
beta-BHC	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	119	
Heptachlor	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	106	
delta-BHC	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
Aldrin	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	115	
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	120	
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
Endosulfan I	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
pp-DDE	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	122	
Dieldrin	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	119	
Endrin	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	116	
pp-DDD	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	114	
Endosulfan II	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
pp-DDT	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0	97	
Methoxychlor	mg/kg	0.1	Org-005	<0.1	2	<0.1	<0.1	0		
Surrogate TCMX	%		Org-005	84	2	126	123	2	120	

QUALITY CONTROL: Organophosphorus Pesticides						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Date analysed	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0		
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0		
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	120	
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0		
Diazinon	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0		
Dichlorvos	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	106	
Dimethoate	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0		
Ethion	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	110	
Fenitrothion	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	101	
Malathion	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	78	
Parathion	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	104	
Ronnel	mg/kg	0.1	Org-008	<0.1	2	<0.1	<0.1	0	126	
Surrogate TCMX	%		Org-008	84	2	126	123	2	109	

Client Reference: 0475405, 17-29 May St, Auburn

QUALITY CONTROL: PCBs in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date extracted	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Date analysed	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	2	<0.1	<0.1	0		
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	2	<0.1	<0.1	0		
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	2	<0.1	<0.1	0		
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	2	<0.1	<0.1	0		
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	2	<0.1	<0.1	0		
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	2	<0.1	<0.1	0	115	
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	2	<0.1	<0.1	0		
Surrogate TCLMX	%		Org-006	84	2	126	123	2	109	

Client Reference: 0475405, 17-29 May St, Auburn

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-9	[NT]
Date prepared	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Date analysed	-			09/11/2018	2	09/11/2018	09/11/2018		09/11/2018	
Arsenic	mg/kg	4	Metals-020	<4	2	6	<4	40	106	
Cadmium	mg/kg	0.4	Metals-020	<0.4	2	<0.4	<0.4	0	99	
Chromium	mg/kg	1	Metals-020	<1	2	7	6	15	103	
Copper	mg/kg	1	Metals-020	<1	2	16	13	21	103	
Lead	mg/kg	1	Metals-020	<1	2	17	22	26	101	
Mercury	mg/kg	0.1	Metals-021	<0.1	2	<0.1	<0.1	0	113	
Nickel	mg/kg	1	Metals-020	<1	2	2	1	67	97	
Zinc	mg/kg	1	Metals-020	<1	2	11	10	10	99	

QUALITY CONTROL: Misc Inorg - Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date prepared	-			13/11/2018					13/11/2018	
Date analysed	-			13/11/2018					13/11/2018	
pH 1:5 soil:water	pH Units		Inorg-001						102	
Chloride, Cl 1:5 soil:water	mg/kg	10	Inorg-081	<10					100	
Sulphate, SO4 1:5 soil:water	mg/kg	10	Inorg-081	<10					102	
Resistivity in soil*	ohm m	1	Inorg-002	<1						

QUALITY CONTROL: Texture and Salinity*						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date prepared	-			13/11/2018					13/11/2018	
Date analysed	-			13/11/2018					13/11/2018	
Electrical Conductivity 1:5 soil:water	µS/cm	1	Inorg-002	<1					102	

QUALITY CONTROL: CEC						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-8	[NT]
Date prepared	-			13/11/2018	2	13/11/2018	13/11/2018		13/11/2018	
Date analysed	-			13/11/2018	2	13/11/2018	13/11/2018		13/11/2018	
Exchangeable Ca	meq/100g	0.1	Metals-009	<0.1	2	0.4	0.5	22	106	
Exchangeable K	meq/100g	0.1	Metals-009	<0.1	2	0.5	0.5	0	118	
Exchangeable Mg	meq/100g	0.1	Metals-009	<0.1	2	9.0	9.3	3	101	
Exchangeable Na	meq/100g	0.1	Metals-009	<0.1	2	2.8	2.8	0	106	

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

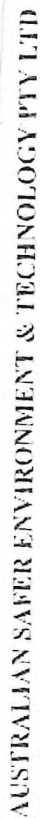
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.



Suite 718/ 20 George Street Hornsby NSW 2077 PO Box 1644 Hornsby Westfield NSW 1635

Phone: 02 9987 2183 Fax: 07 9987 2151 Email: aset@bigpond.net.au

Company Name & Address				Contact Name: <u>Tristan</u>						
ERM Services Unit 11, 277 Lane Cove Road Macquarie Park NSW 2113				Job No. <u>0475405</u>						
Contact Ph. <u>8580 8740</u>				Project Name <u>Mary St Auburn</u>						
Email Results to: <u>Tristan.Rodrigues@e.m.com</u>				Email Results to: <u>Matthew.Rodrigues@e.m.com</u>						
Sample ID				Sample Location						
	Sample ID	Date	Matrix	Container	SMF	Asbestos in Soil/ Dust	Asbestos in material	Asbestos Fibre Count	Asbestos in Water	Asbestos W/W%
1	M1	6/11/18	soil	Bag						X
2	M2									X
3	M3									X
4	M4									X
5	M5									X
6	M6									X
7	M7									X
8	M8									X
9	M9									X
10	M10									X

RECEIVED

11 NOV 2018

BY: 

Received By: Kishan

Date & Time: 7-11-18

Signature: 

Relinquished By: Tristan

Date & Time: 7-11-18

Signature: 

WASTE CLASSIFICATION CERTIFICATE

EI Document Ref: E23969.E05.V01.Rev0



PROJECT NO: E23969.E05

CLIENT Details:

MOITS
PO BOX 4037, Macquarie Centre,
MACQUARIE PARK NSW 2113

Project Name: St Leonards Health Organisation Relocation (SHOR)

Work Phase: Waste Classification

Client Contact: Mr Nick Chong Sun

Certificate Date: 01-November-2018

LOCATION (where waste was generated):

Site Address: SHOR, Reserve Road, St Leonards NSW

Lot / DP: Part Lot 210 in DP1172133

LGA: Willoughby

Current Zoning: SP2 - Infrastructure

Site Map Attached: Yes ☒

No ☐

Site observations & History: The site was previously occupied by two buildings as part of the Royal North Shore Hospital. Based on site observations during sampling all former structures had been demolished and removed from the site.

Surrounding land use: The site was surrounded by Hospital grounds.

Acid Sulfate Soil Risk: The 1:25 000 scale Prospect/Parramatta River Acid Sulfate Soil Risk Map – Edition Two (Ref. Murphy, 1997) indicates that the subject land lies within the map class description of No Known Occurrence. In such cases, acid sulfate soils (ASS) are not known or expected to occur and "land management activities are not likely to be affected by ASS materials". EI consider that acid sulfate soils are unlikely to be present on site.

Proposed site use: Demolition of all former site structures, and the construction of a multi-storey residential building overlying a basement level basement car park. To reach bulk excavation levels excavations of a maximum of 5.5m below original ground level will be required.

MATERIAL SOURCE: In-situ natural material located within the basement bulk excavation at the site, as shown in Figure 2.

MATERIAL CHARACTERISATION:

Material Description: Silty CLAY; medium to high plasticity, brown-grey-orange, no odour.
Sandstone; Medium grained, yellow-red-orange, no odour.

Sampling method: Manual grab samples collected from the near surface of newly exposed natural material and evenly distributed across the classification area, as shown in Figure 2.

Volume: 5000 m³ (approx.)

Tonnage: 9000 Tonnes (approx.)

Bulk density taken as 1.8 t/m³ for clay (Look, 2014)²

Tested Sample(s): V1_A-B, V1_C-D, V2_B-C/3-4, V2_C-D/3-4, V2_C/4-5, V2_C-D/4-5, V3-AB/2-3, V3-CD/2-3, V4-C5, V4-D5, V5-AB-34, V5-AB-34S, V6-AB5, V6-BC5, V7_A/B-4/5, V7_B/C-3/4, V7_B/C-2/3, V7_D/E-2/3, V7_D/E-3/4, V7_D/E-4/5 & V7_D/E-5/6.

Sampling procedure and Quality Assurance / Control: All samples were collected by a suitably qualified, trained and experienced environmental engineer/scientist in asbestos identification in accordance with EPA requirements. Soil samples were collected using an unused/dedicated nitrile gloves & placed into 250g laboratory-prepared glass jars, which were capped using Teflon-sealed, screw caps and immediately refrigerated prior to being delivered to the contract environmental laboratory under strict Chain-of-Custody conditions.

Sampling Date: 7/09/2018, 10/09/2018, 24/09/2018,
27/09/2018 & 17/10/2018

Sample Nos: 17

Primary Laboratory: Eurofins, Lane cove NSW

EPA (2014) Waste classification steps

Step 1 - Visual evidence Special Waste	Yes	☐	No	☒
Step 2 - Is the waste liquid waste	Yes	☐	No	☒
Step 3 - Is the waste Pre-classified	Yes	☐	No	☒
Step 4 - Are hazardous substances present	Yes	☐	No	☒
Step 5 - Is chemical assessment required	Yes	☒	No	☐
Analytical Data Attached:	Yes	☒		

Note: Only data for above-listed samples tested are representative of classified material

MATERIAL SUITABILITY FOR BENEFICIAL ONSITE RE-USE AT: SHOR, RESERVE ROAD, ST LEONARDS NSW

Material meets Site Acceptance Criteria⁴ of:

Yes ☐

No ☐

Comment:

This material has NOT been assessed for onsite re-use.

CLASSIFICATION FOR OFF-SITE DISPOSAL

Waste Classification:⁵ Assessed class.¹⁰
Special Waste:
Scheduled Waste:

VIRGIN EXCAVATED NATURAL MATERIAL (VENM)

Not Applicable

NO

Classification Comments:⁶

The material delivered must be consistent with the description given in the Material Characterisation section above.

This classification is only applicable to in-situ natural soils within the classification area, as highlighted in Figure 2. This classification is does not include any other material from across the site.

The Waste Management Facility must satisfy itself that it is appropriately licensed to receive the material described in this certificate, Table 1 and attachments. The waste must be removed from the site and disposed to a facility licensed to accept this type of waste, in accordance with the Protection of the Environment Operations (Waste) Regulation 2014.

Notes:

For validation of the natural material classified under this certificate, OC/OP pesticides and PCBs were not analysed. EI completed a review of OC/OP Pesticides and PCB concentrations within the overlying fill material. Contaminant concentrations were low and/or less than the laboratory practical quantification limit (<PQL). Given the low concentrations reported within the overlying fill material, EI consider that the natural material described under this certificate can be being classified as VENM.

Disposal Options:^{7,8}

Suitable for disposal at facility licensed to receive:

VIRGIN EXCAVATED NATURAL MATERIAL (VENM)

Author:

Reviewer:

Nathan Spanos
Environmental Scientist

Ben Aggar
Environmental Engineer - Project Coordinator

WASTE CLASSIFICATION CERTIFICATE - Important Notes and Comments

- 1: Zoning as per Willoughby Local Environmental Plan (2012)
- 2: Look, B. (2014), Handbook of Geotechnical Investigation and Design Tables, CRC Press.
- 3: Sampling conducted in accordance with EI Australia *Standard Operating Procedure for Waste Characterisation Sampling*, NSW EPA Contaminated Sites: *Sampling Design Guidelines*, 1995 and the National Environmental Protection Measure (1999) Amendment (2013) Schedule B2 Site Characterisation.
- 4: Site Acceptance Criteria as listed in National Environment Protection (Assessment of Site Contamination) Measure 1999, Amendment 2013, Schedule B(2).
- 5: Classification in Accordance with Tables 1 and 2 of the NSW Environment Protection Authority (EPA) *Waste Classification Guidelines, Part 1: Classifying waste*, November 2014.
- 6: The Waste Management Facility must satisfy itself that it is appropriately licensed to receive the material described in this certificate, Table 1 and attachments.
- 7: The Protection of the Environment Operations (POEO) Act 1997 Section 143 states that if waste is transported to a facility not lawfully authorised as a waste facility for that waste, the owner, transporter and receiver of the waste are each guilty of an offence. The owner of waste includes, in relation to waste that has been transported, the person who was the owner of the waste immediately before it was transported. It should be noted that under the POEO (waste) Regulation 2014, Part 6, a person must not transport waste that is generated in NSW to any place in or outside of NSW, which is greater than 150 km from the source site. Pre acceptance of waste by the receiving disposal operator is recommended.
- 8: Under Section 144AA of the POEO Act it is an offence to supply information, or cause or permit information to be supplied, "that is false or misleading in a material respect about waste, to another person in the course of dealing with the waste".
- 9: Generators and transporters of Asbestos Waste have a legal obligation to ensure their waste goes to a lawful place. Under Clauses 76 and 79 of the Protection of the Environment (Waste) Regulation 2014 and the NSW EPA 2015 Asbestos and Waste Tyres Guidelines, consignors and transporters of Asbestos Waste, and facilities receiving these wastes, must use "WasteLocate" to provide information to the EPA regarding their movement within NSW. Further information about the "WasteLocate" system is available online from the NSW EPA Website at: <http://www.epa.nsw.gov.au/publications/waste/150702-asbestos-waste-tyres.htm>
- 10: Virgin excavated natural material (VENM) is a waste that has been pre-classified as general solid waste (non-putrescible). Under the PoEO Act 1997, virgin excavated natural material (VENM) is, 'natural material (such as clay, gravel, sand, soil or rock fines), that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities and does not contain any sulfidic ores or soils or any other waste. .
- 11: ENM classified in accordance with the ENM order 2014 (NSW EPA).

STATEMENT OF LIMITATIONS

This report was prepared for the exclusive use of MOITS (the client), who is the only intended beneficiary of EI's work. The scope of the works carried out for the purpose of this waste classification certificate is limited to those agreed with the client.

No other party should rely on this document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

EI has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia as at the date of this document. No other warranty, expressed or implied, is made or intended. Each section of this report must be read in conjunction with the whole of this report, including its appendices and attachments.

The conclusions presented in this waste classification are based on a limited investigation of conditions, with specific sampling locations chosen to be as representative as possible under the given circumstances.

EI's professional opinions are reasonable and based on its professional judgment, experience, training and results from analytical data. EI may also have relied upon information provided by the Client and other third parties to prepare this document, some of which may not have been verified by EI.

EI's professional opinions contained in this document are subject to modification if materials are added to the previously characterised waste soil stockpile. In such cases, further testing and analysis will be required, which may result in a further waste classification certificate with different conclusions.

PHOTO LOG:



Photo 1: Site conditions (26/10/18).



Photo 2: Site conditions (26/10/18).

Sample ID	Sampling Date	Heavy Metals							PAHs		BTEX				TRHs		OCPs	Total PCBs	Asbestos
		As	Cd	Cu ¹	Pb	Ni	Hg		Benzo(a)pyrene	Total PAHs	Benzene	Toluene	Ethylbenzene	Total Xylenes	C ₁₀ -C ₁₄	C ₁₅ -C ₂₀			
NSW EPA 2014 General Solid Waste	CT1 (mg/kg) ¹	100	20	100 ¹	100	40	4		0.8	200	10	288	600	1,000	650	10,000	<50	250	NR
	TCLP1 (mg/L)	5	1	5	5	2	0.2		0.04	NR	0.5	14.4	30	50	NR	NR	NR	NR	NR
	SC1 (mg/kg) ²	500	100	1,500	1,500	1,050	50		10	200	18	518	1,080	1,800	650	10,000	<50	250	NR
	CT2 (mg/kg) ¹	400	80	400 ¹	400	160	16		3.2	800	40	1,152	2,400	4,000	2,800	40,000	<50	1,000	NR
NSW EPA 2014 Restricted Solid Waste	TCLP2 (mg/L)	20	4	20	20	8	0.8		0.16	NR	2	58	120	200	NR	NR	NR	NR	NR
	SC2 (mg/kg) ⁴	2,000	400	7,500	6,000	4,200	200		23	800	72	2,073	4,320	17,200	2,600	40,000	<50	1,000	NR
	Special Waste / Scheduled Waste																		
VLA-SW-A-3	7/6/2018	6.3	<0.4	18	13	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V1_C-0	12	<0.4	31	23	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V2_B-C-0-4	12	<0.4	23	19	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V2_C-0-4	6.6	<0.4	18	11	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V2_C-0-4-5	5.8	<0.4	15	14	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V2_C-0-4-5	3.8	<0.4	17	6.8	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V6-C-0	14	<0.4	56	20	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V6-AB-3-4	<2	<0.4	<5	14	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V6-AB-5	8.1	<0.4	30	29	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V7-AB-4-5	7.1	<0.4	25	18	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	NA	NA	No
	V7-BIC-3-4	3.3	<0.4	7.9	22	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<POL	<0.1	No
	V7-BIC-3-3	4	<0.4	13	11	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<POL	<0.1	No
	V7-DIE-2-3	5.8	<0.4	11	18	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<POL	<0.1	No
	V7-DIE-3-4	6.6	<0.4	14	19	<5	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<POL	<0.1	No
	V7-DIE-4-5	2.9	<0.4	13	14	11	<0.1	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<POL	<0.1	No
	V7-DIE-5-6	7.8	<0.4	16	18	<5	0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<POL	<0.1	No
Maximum 95% UCL ⁷		14	<0.4	58	29	11	0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<POL	<0.1	No
		NC	NC	NC	NC	NC	NC	<0.5	<0.5	<0.5	<0.1	<0.1	<0.1	<0.3	<20	<50	<POL	<0.1	NC
Waste Classification		VIRGIN EXCAVATED NATURAL MATERIAL (VENM) ¹⁰																	

Note

NA Not Analysed

NC Not Calculated

NR No reference criteria available in current regulatory tools.

Scheduled Chemicals: Where none detected the LOR has been used to sum

Moderately Harmful Pesticides

1 NSW EPA 2014 CT1 General Solid Waste Thresholds (without leachate test), in Waste Classification Guidelines, Table 1

2 NSW EPA 2014 CT2 Maximum values for Leachable concentration and specific contaminant concentration for Restricted Solid Waste Thresholds, Waste Classification Guidelines Table 1

3 NSW EPA 2014 TCLP (HSCC) General Solid Waste Thresholds (leachable concentration and total concentration when used together), in Waste Classification Guidelines Table 2

4 NSW EPA 2014 CT1 Maximum values for Leachable concentration and specific contaminant concentration for Restricted Solid Waste Thresholds, Waste Classification Guidelines Table 2

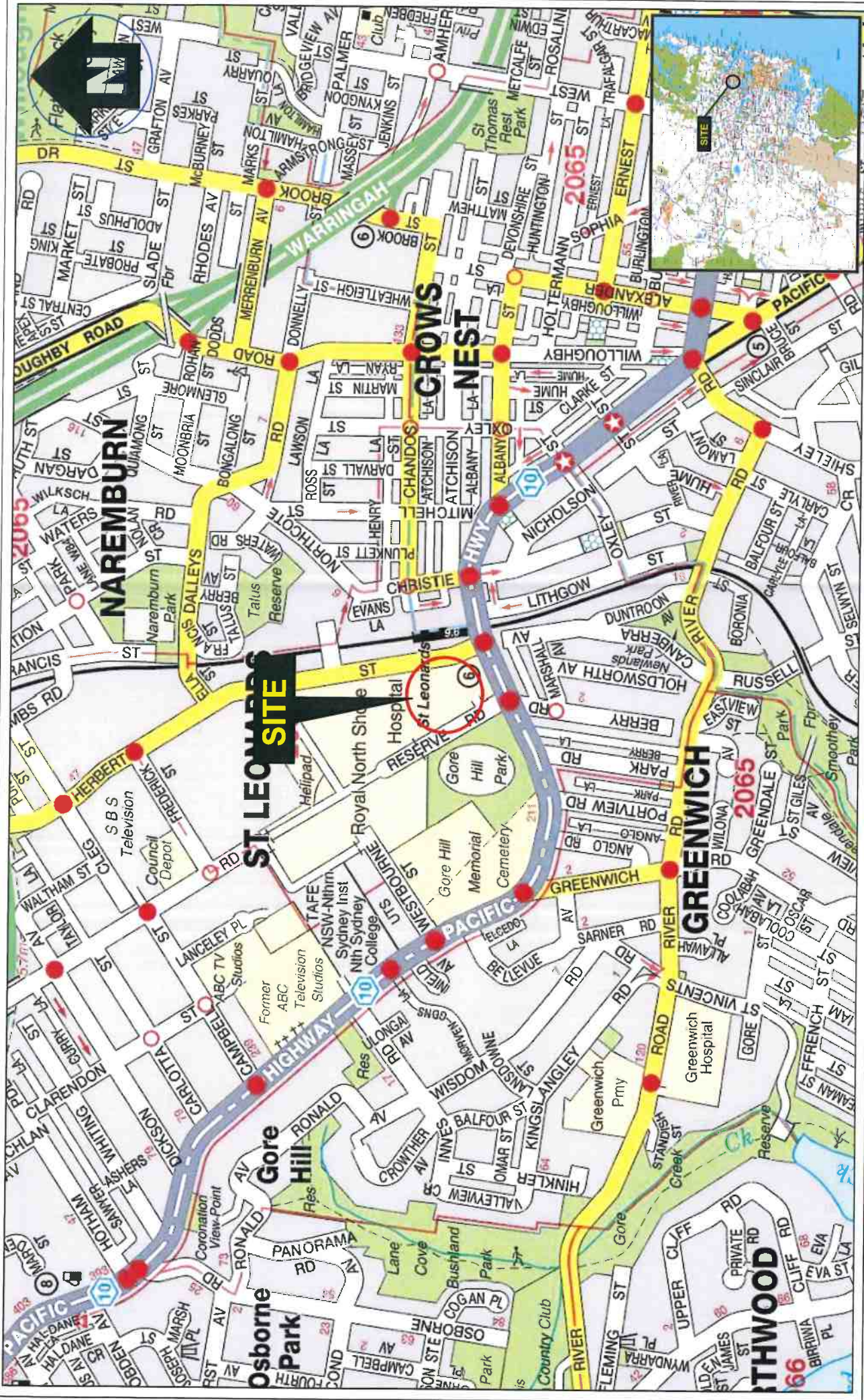
5 NSW EPA Scheduled Chemical Control Order 2004, Section 4.14

6 NSW EPA Polychlorinated Biphenyl (PCB) Chemical Control Order 1997 Where PCBs are reported at concentrations >2 mg/kg and <50 mg/kg, material non-scheduled PCB waste. Where PCBs are reported at concentrations >50 mg/kg, material is scheduled PCB waste.

7 95% UCL only performed for analyte where soil concentrations exceed waste classification criteria in samples

General Solid Waste

Restricted Solid Waste Criteria





Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn: EW

Approved: TG

Date: 15-08-18

Scale: Not To Scale

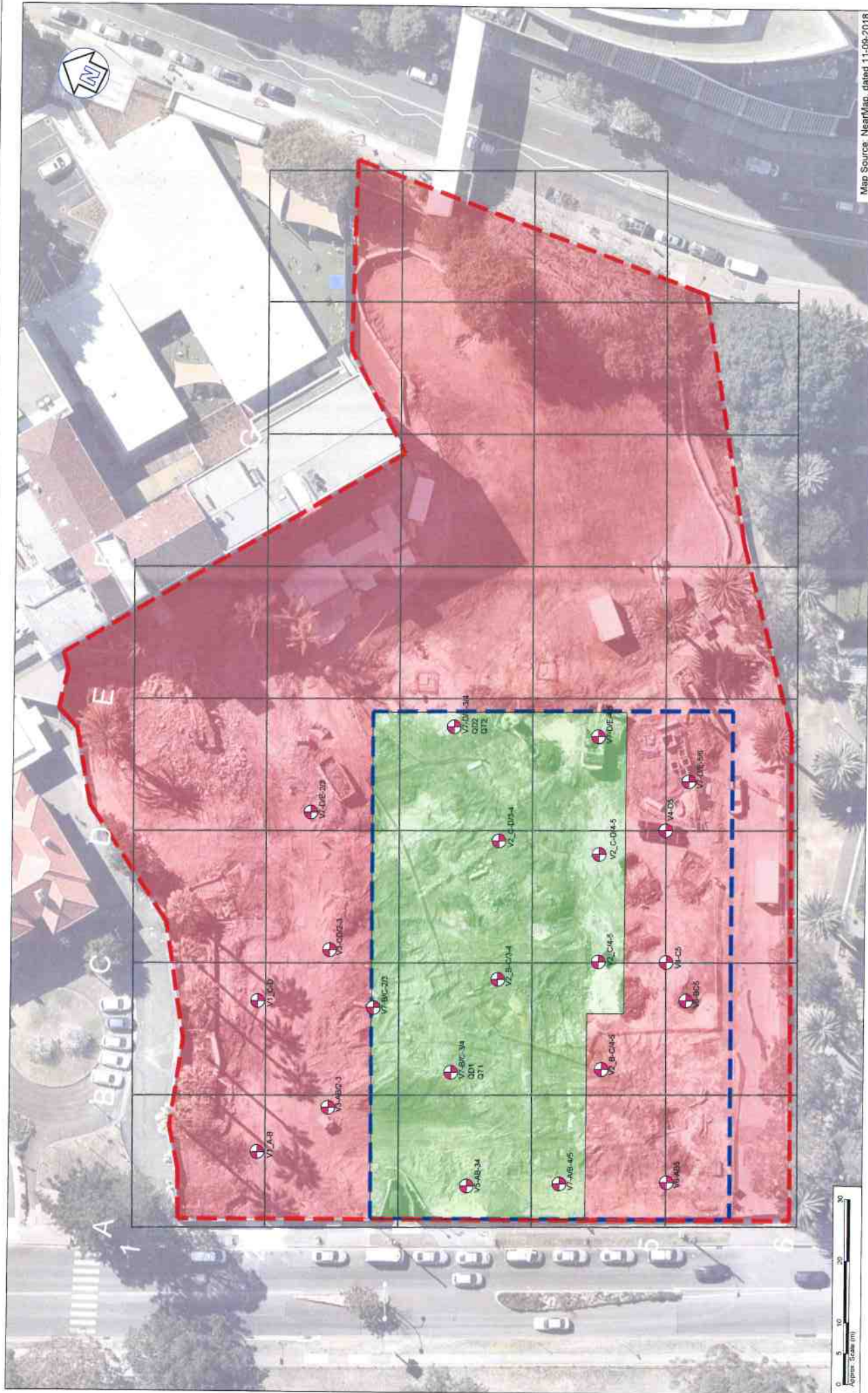
Figure: 1

MOITS

Waste Classification

SHOR, Reserve Road, St Leonards NSW

Site Locality Plan



- LEGEND**
- Approximate site boundary
 - Approximate basement boundary
 - Approximate validation sampling location
 - Approximate area of material classified as VENM under this classification E23969 E05 V01
 - Approximate area of material not classified as VENM under this classification E23969 E05 V01



Drawn:	N.S.
Approved:	B.A..
Date:	01-11-18

MOITS
Waste Classification
St Leonards Health Organisation Relocation,
Reserve Rd, St Leonards, NSW
Site Layout

Sample Receipt Advice

Company name: EI Australia
Contact name: Kate Warton
Project name: SHOR-RESERVE ROAD ST LEONARDS
Project ID: E23969.E07
COC number: Not provided
Turn around time: 1 Day
Date/Time received: Sep 7, 2018 2:50 PM
Eurofins | mgt reference: 616424

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Kate Warton - kate.warton@eiaustralia.com.au.

Certificate of Analysis

El Australia
Suite 6.01, 55 Miller Street
Pymont
NSW 2009



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Kate Warton

Report 616424-S
Project name SHOR-RESERVE ROAD ST LEONARDS
Project ID E23969.E07
Received Date Sep 07, 2018

Client Sample ID			V1_A-B	V1_C-D
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-Se08855	S18-Se08856
Date Sampled			Sep 07, 2018	Sep 07, 2018
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	79	71
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
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
Benzo(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			V1_A-B	V1_C-D
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-Se08855	S18-Se08856
Date Sampled			Sep 07, 2018	Sep 07, 2018
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Dibenz(a,h)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(1.2.3-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
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	103	99
p-Terphenyl-d14 (surr.)	1	%	116	112
Heavy Metals				
Arsenic	2	mg/kg	6.3	12
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	18	31
Copper	5	mg/kg	< 5	< 5
Lead	5	mg/kg	13	23
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5
Zinc	5	mg/kg	< 5	13
% Moisture	1	%	17	23

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - LTM-ORG-2010	Sydney	Sep 07, 2018	14 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 07, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 07, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 07, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Sep 07, 2018	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Sep 07, 2018	28 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Sep 07, 2018	14 Day

Company Name:

Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name: SHOR-RESERVE ROAD ST LEONARDS
Project ID: E23969.E07

Order No.:
Report #:
Phone:
Fax:

616424
02 9516 0722

Received: Sep 7, 2018 2:50 PM
Due: Sep 10, 2018
Priority: 1 Day
Contact Name: Kate Warton

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Sample Detail							Eurofins mgt Suite B7					
							Moisture Set					
							Asbestos - AS4964					
Melbourne Laboratory - NATA Site # 1254 & 14271												
Sydney Laboratory - NATA Site # 18217												
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 23736												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
1	V1 A-B	Sep 07, 2018		Soil	S18-Se08855	X	X	X	X	X		
2	V1 C-D	Sep 07, 2018		Soil	S18-Se08856	X	X	X	X	X		
Test Counts							2	2	2	2	2	

Internal Quality Control Review and Glossary

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. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 SRA. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report. QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
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&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)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(1,2,3-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	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	94			70-130	Pass	

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14			%	90		70-130	Pass	
LCS - % Recovery								
BTEX								
Benzene			%	103		70-130	Pass	
Toluene			%	103		70-130	Pass	
Ethylbenzene			%	102		70-130	Pass	
m&p-Xylenes			%	105		70-130	Pass	
o-Xylene			%	104		70-130	Pass	
Xylenes - Total			%	105		70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions								
Naphthalene			%	91		70-130	Pass	
TRH C6-C10			%	89		70-130	Pass	
TRH >C10-C16			%	96		70-130	Pass	
LCS - % Recovery								
Polycyclic Aromatic Hydrocarbons								
Acenaphthene			%	108		70-130	Pass	
Acenaphthylene			%	114		70-130	Pass	
Anthracene			%	123		70-130	Pass	
Benz(a)anthracene			%	128		70-130	Pass	
Benzo(a)pyrene			%	123		70-130	Pass	
Benzo(b&j)fluoranthene			%	121		70-130	Pass	
Benzo(g,h,i)perylene			%	89		70-130	Pass	
Benzo(k)fluoranthene			%	118		70-130	Pass	
Chrysene			%	119		70-130	Pass	
Dibenz(a,h)anthracene			%	130		70-130	Pass	
Fluoranthene			%	125		70-130	Pass	
Fluorene			%	116		70-130	Pass	
Indeno(1,2,3-cd)pyrene			%	129		70-130	Pass	
Naphthalene			%	114		70-130	Pass	
Phenanthrene			%	122		70-130	Pass	
Pyrene			%	124		70-130	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic			%	97		70-130	Pass	
Cadmium			%	106		70-130	Pass	
Chromium			%	97		70-130	Pass	
Copper			%	98		70-130	Pass	
Lead			%	94		70-130	Pass	
Mercury			%	96		70-130	Pass	
Nickel			%	96		70-130	Pass	
Zinc			%	100		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C10-C14	S18-Se07289	NCP	%	76		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	S18-Se08411	NCP	%	85		70-130	Pass	
TRH >C10-C16	S18-Se07289	NCP	%	81		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	S18-Se03700	NCP	%	101		70-130	Pass	
Acenaphthylene	S18-Se03700	NCP	%	109		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene	S18-Se03700	NCP	%	119			70-130	Pass	
Benz(a)anthracene	S18-Se03700	NCP	%	123			70-130	Pass	
Benzo(a)pyrene	S18-Se03700	NCP	%	115			70-130	Pass	
Benzo(b&i)fluoranthene	S18-Se03700	NCP	%	111			70-130	Pass	
Benzo(g,h,i)perylene	S18-Se03700	NCP	%	117			70-130	Pass	
Benzo(k)fluoranthene	S18-Se03700	NCP	%	108			70-130	Pass	
Chrysene	S18-Se03700	NCP	%	111			70-130	Pass	
Dibenz(a,h)anthracene	S18-Se03700	NCP	%	117			70-130	Pass	
Fluoranthene	S18-Se03700	NCP	%	116			70-130	Pass	
Fluorene	S18-Se03700	NCP	%	108			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-Se03700	NCP	%	118			70-130	Pass	
Naphthalene	S18-Se03700	NCP	%	107			70-130	Pass	
Phenanthrene	S18-Se03700	NCP	%	116			70-130	Pass	
Pyrene	S18-Se03700	NCP	%	113			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Se05282	NCP	%	96			70-130	Pass	
Cadmium	S18-Se05282	NCP	%	102			70-130	Pass	
Chromium	S18-Se05282	NCP	%	103			70-130	Pass	
Copper	S18-Se05282	NCP	%	106			70-130	Pass	
Lead	S18-Se05282	NCP	%	86			70-130	Pass	
Mercury	S18-Se05282	NCP	%	94			70-130	Pass	
Nickel	S18-Se05282	NCP	%	104			70-130	Pass	
Zinc	S18-Se05282	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-Se08856	CP	%	80			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-Se08856	CP	%	92			70-130	Pass	
Toluene	S18-Se08856	CP	%	90			70-130	Pass	
Ethylbenzene	S18-Se08856	CP	%	90			70-130	Pass	
m&p-Xylenes	S18-Se08856	CP	%	92			70-130	Pass	
o-Xylene	S18-Se08856	CP	%	91			70-130	Pass	
Xylenes - Total	S18-Se08856	CP	%	92			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	S18-Se08856	CP	%	77			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-Se08992	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S18-Se08410	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S18-Se08410	NCP	mg/kg	61	57	<1	30%	Pass	
TRH C29-C36	S18-Se08410	NCP	mg/kg	56	63	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-Se08992	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-Se08992	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-Se08992	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-Se08992	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-Se08992	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-Se08992	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-Se08992	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-Se08992	NCP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S18-Se08410	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S18-Se08410	NCP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S18-Se08410	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-Se05281	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-Se05281	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-Se05281	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-Se05281	NCP	mg/kg	1.1	< 0.5	100	30%	Fail Q15
Benzo(a)pyrene	S18-Se05281	NCP	mg/kg	1.0	< 0.5	87	30%	Fail Q15
Benzo(b&j)fluoranthene	S18-Se05281	NCP	mg/kg	0.7	< 0.5	88	30%	Fail Q15
Benzo(g,h,i)perylene	S18-Se05281	NCP	mg/kg	0.6	< 0.5	76	30%	Fail Q15
Benzo(k)fluoranthene	S18-Se05281	NCP	mg/kg	0.8	< 0.5	81	30%	Fail Q15
Chrysene	S18-Se05281	NCP	mg/kg	0.9	< 0.5	97	30%	Fail Q15
Dibenz(a,h)anthracene	S18-Se05281	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-Se05281	NCP	mg/kg	2.3	0.8	98	30%	Fail Q15
Fluorene	S18-Se05281	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-Se05281	NCP	mg/kg	0.5	< 0.5	80	30%	Fail Q15
Naphthalene	S18-Se05281	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-Se05281	NCP	mg/kg	0.7	< 0.5	100	30%	Fail Q15
Pyrene	S18-Se05281	NCP	mg/kg	2.1	0.7	96	30%	Fail Q15
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-Se08419	NCP	mg/kg	7.6	7.8	3.0	30%	Pass
Cadmium	S18-Se07288	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-Se08419	NCP	mg/kg	15	17	16	30%	Pass
Copper	S18-Se08419	NCP	mg/kg	33	31	5.0	30%	Pass
Lead	S18-Se08419	NCP	mg/kg	28	26	6.0	30%	Pass
Mercury	S18-Se05281	NCP	mg/kg	0.1	0.1	15	30%	Pass
Nickel	S18-Se08419	NCP	mg/kg	16	15	5.0	30%	Pass
Zinc	S18-Se08419	NCP	mg/kg	72	68	6.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-Se08855	CP	%	17	15	15	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya Analytical Services Manager
 Nibha Vaidya Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis



NATA Accredited

Accreditation Number 1261

Site Number 18217

Accredited for compliance with ISO/IEC 17025-Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards

El Australia
Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Attention: Kate Warton
Report 616424-AID
Project Name SHOR-RESERVE ROAD ST LEONARDS
Project ID E23969.E07
Received Date Sep 07, 2018
Date Reported Sep 10, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004. Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w). The examination of large sample sizes (500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction. The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA (friable asbestos) and AF (asbestos fines) then applies where they are able to be quantified by gravimetric procedures. This quantitative screening is not generally applicable to FF (free fibres) and results of Trace Analysis are referred.

NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk).

This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.

Project Name SHOR-RESERVE ROAD ST LEONARDS
Project ID E23969.E07
Date Sampled Sep 07, 2018
Report 616424-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
V1_A-B	18-Se08855	Sep 07, 2018	Approximate Sample 114g Sample consisted of: Beige fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V1_C-D	18-Se08856	Sep 07, 2018	Approximate Sample 96g Sample consisted of: Beige fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 07, 2018	Indefinite

Company Name: El Australia
Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name: SHOR-RESERVE ROAD ST LEONARDS
Project ID: E23969.E07

Order No.:
Report #:
Phone:
Fax:

616424
02 9516 0722

Received: Sep 7, 2018 2:50 PM
Due: Sep 10, 2018
Priority: 1 Day
Contact Name: Kate Warton

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

[illegible]

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Laxman Dias Senior Analyst-Asbestos (NSW)

Authorised by:

Nibha Vaidya Senior Analyst-Asbestos (NSW)



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Sample Receipt Advice

Company name: EI Australia
Contact name: Kate Warton
Project name: SHOR RESERVE RD ST LEONARDS
Project ID: E23969.E07
COC number: Not provided
Turn around time: Overnight
Date/Time received: Sep 10, 2018 5:40 PM
Eurofins | mgt reference: 616777

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Kate Warton - kate.warton@eiaustralia.com.au.

Certificate of Analysis

El Australia
 Suite 6.01, 55 Miller Street
 Pyrmont
 NSW 2009



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards

Attention: Kate Warton

Report 616777-S
 Project name SHOR RESERVE RD ST LEONARDS
 Project ID E23969.E07
 Received Date Sep 10, 2018

Client Sample ID			V2_B-C/3-4	V2_C-D/3-4	V2_B-C/4-5	V2_C/4-5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Se12039	S18-Se12040	S18-Se12041	S18-Se12042
Date Sampled			Sep 10, 2018	Sep 10, 2018	Sep 10, 2018	Sep 10, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	77	87	85	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			V2_B-C/3-4	V2_C-D/3-4	V2_B-C/4-5	V2_C/4-5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Se12039	S18-Se12040	S18-Se12041	S18-Se12042
Date Sampled			Sep 10, 2018	Sep 10, 2018	Sep 10, 2018	Sep 10, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	129	123	122	119
p-Terphenyl-d14 (surr.)	1	%	147	150	149	147
Heavy Metals						
Arsenic	2	mg/kg	12	6.6	4.3	5.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	18	12	15
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	19	11	11	14
Mercury	0.1	mg/kg	< 0.1	< 0.1	1.4	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	< 5	13	6.7
% Moisture	1	%	22	18	16	17

Client Sample ID			V2_C-D/4-5
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-Se12043
Date Sampled			Sep 10, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100

Client Sample ID			V2_C-D/4-5
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-Se12043
Date Sampled			Sep 10, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
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&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-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
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	121
p-Terphenyl-d14 (surr.)	1	%	145
Heavy Metals			
Arsenic	2	mg/kg	3.8
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	17
Copper	5	mg/kg	< 5
Lead	5	mg/kg	6.8
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	< 5
% Moisture	1	%	4.4

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - LTM-ORG-2010	Sydney	Sep 10, 2018	14 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 10, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 10, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 10, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Sep 10, 2018	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Sep 10, 2018	28 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Sep 10, 2018	14 Day

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name: SHOR RESERVE RD ST LEONARDS
Project ID: E23969.E07

Order No.:
Report #: 616777
Phone: 02 9516 0722
Fax:

Received: Sep 10, 2018 5:40 PM
Due: Sep 11, 2018
Priority: Overnight
Contact Name: Kate Warton

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Eurofins mgt Suite B7					
Moisture Set					
Asbestos - AS4964					
Melbourne Laboratory - NATA Site # 1254 & 14271					
Sydney Laboratory - NATA Site # 18217					
Brisbane Laboratory - NATA Site # 20794					
Perth Laboratory - NATA Site # 23736					
External Laboratory					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID
1	V2 B-C/3-4	Sep 10, 2018		Soil	S18-Se12039
2	V2 C-D/3-4	Sep 10, 2018		Soil	S18-Se12040
3	V2 B-C/4-5	Sep 10, 2018		Soil	S18-Se12041
4	V2 C/4-5	Sep 10, 2018		Soil	S18-Se12042
5	V2 C-D/4-5	Sep 10, 2018		Soil	S18-Se12043
Test Counts					
					5 5 5

Internal Quality Control Review and Glossary

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. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 SRA. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
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&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)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(1,2,3-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	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	104			70-130	Pass	

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14			%	96		70-130	Pass	
LCS - % Recovery								
BTEX								
Benzene			%	111		70-130	Pass	
Toluene			%	110		70-130	Pass	
Ethylbenzene			%	109		70-130	Pass	
m&p-Xylenes			%	110		70-130	Pass	
o-Xylene			%	110		70-130	Pass	
Xylenes - Total			%	110		70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions								
Naphthalene			%	125		70-130	Pass	
TRH C6-C10			%	96		70-130	Pass	
TRH >C10-C16			%	102		70-130	Pass	
LCS - % Recovery								
Polycyclic Aromatic Hydrocarbons								
Acenaphthene			%	107		70-130	Pass	
Acenaphthylene			%	116		70-130	Pass	
Anthracene			%	111		70-130	Pass	
Benz(a)anthracene			%	108		70-130	Pass	
Benzo(a)pyrene			%	113		70-130	Pass	
Benzo(b&j)fluoranthene			%	106		70-130	Pass	
Benzo(g,h,i)perylene			%	118		70-130	Pass	
Benzo(k)fluoranthene			%	117		70-130	Pass	
Chrysene			%	113		70-130	Pass	
Dibenz(a,h)anthracene			%	119		70-130	Pass	
Fluoranthene			%	110		70-130	Pass	
Fluorene			%	107		70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	117		70-130	Pass	
Naphthalene			%	108		70-130	Pass	
Phenanthrene			%	109		70-130	Pass	
Pyrene			%	113		70-130	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic			%	94		70-130	Pass	
Cadmium			%	97		70-130	Pass	
Chromium			%	97		70-130	Pass	
Copper			%	98		70-130	Pass	
Lead			%	98		70-130	Pass	
Mercury			%	96		70-130	Pass	
Nickel			%	97		70-130	Pass	
Zinc			%	101		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals								
				Result 1				
Arsenic	S18-Se06434	NCP	%	80		70-130	Pass	
Cadmium	S18-Se06434	NCP	%	83		70-130	Pass	
Chromium	S18-Se06434	NCP	%	99		70-130	Pass	
Copper	S18-Se06434	NCP	%	86		70-130	Pass	
Lead	S18-Se06434	NCP	%	77		70-130	Pass	
Mercury	S18-Se06434	NCP	%	76		70-130	Pass	
Nickel	S18-Se06434	NCP	%	79		70-130	Pass	
Zinc	S18-Se06434	NCP	%	91		70-130	Pass	
Spike - % Recovery								

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-Se12040	CP	%	92			70-130	Pass	
TRH C10-C14	S18-Se12040	CP	%	92			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-Se12040	CP	%	92			70-130	Pass	
Toluene	S18-Se12040	CP	%	89			70-130	Pass	
Ethylbenzene	S18-Se12040	CP	%	88			70-130	Pass	
m&p-Xylenes	S18-Se12040	CP	%	90			70-130	Pass	
o-Xylene	S18-Se12040	CP	%	89			70-130	Pass	
Xylenes - Total	S18-Se12040	CP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-Se12040	CP	%	90			70-130	Pass	
TRH C6-C10	S18-Se12040	CP	%	89			70-130	Pass	
TRH >C10-C16	S18-Se12040	CP	%	95			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-Se12040	CP	%	91			70-130	Pass	
Acenaphthylene	S18-Se12040	CP	%	99			70-130	Pass	
Anthracene	S18-Se12040	CP	%	92			70-130	Pass	
Benz(a)anthracene	S18-Se12040	CP	%	94			70-130	Pass	
Benzo(a)pyrene	S18-Se12040	CP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Se12040	CP	%	90			70-130	Pass	
Benzo(g,h,i)perylene	S18-Se12040	CP	%	113			70-130	Pass	
Benzo(k)fluoranthene	S18-Se12040	CP	%	99			70-130	Pass	
Chrysene	S18-Se12040	CP	%	97			70-130	Pass	
Dibenz(a,h)anthracene	S18-Se12040	CP	%	98			70-130	Pass	
Fluoranthene	S18-Se12040	CP	%	93			70-130	Pass	
Fluorene	S18-Se12040	CP	%	91			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-Se12040	CP	%	95			70-130	Pass	
Naphthalene	S18-Se12040	CP	%	92			70-130	Pass	
Phenanthrene	S18-Se12040	CP	%	92			70-130	Pass	
Pyrene	S18-Se12040	CP	%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-Se12039	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S18-Se12039	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S18-Se12039	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S18-Se12039	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-Se12039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-Se12039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-Se12039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-Se12039	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-Se12039	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-Se12039	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-Se12039	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S18-Se12039	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S18-Se12039	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S18-Se12039	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-Se12039	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-Se08265	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Chromium	S18-Se08265	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Copper	S18-Se08265	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Mercury	S18-Se08265	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-Se08265	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S18-Se08265	NCP	mg/kg	< 5	< 5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-Se12039	CP	%	22	22	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya Analytical Services Manager
Nibha Vaidya Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025-Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

El Australia
Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Attention: Kate Warton
Report 616777-AID
Project Name SHOR RESERVE RD ST LEONARDS
Project ID E23969.E07
Received Date Sep 10, 2018
Date Reported Sep 11, 2018

Methodology:

Asbestos Fibre
 Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
 Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
 Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
 containing material
 (ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w). The examination of large sample sizes (500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction. The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA (friable asbestos) and AF (asbestos fines) then applies where they are able to be quantified by gravimetric procedures. This quantitative screening is not generally applicable to FF (free fibres) and results of Trace Analysis are referred.

NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk). This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.

Project Name SHOR RESERVE RD ST LEONARDS
Project ID E23969.E07
Date Sampled Sep 10, 2018
Report 616777-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
V2_B-C/3-4	18-Se12039	Sep 10, 2018	Approximate Sample 112g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V2_C-D/3-4	18-Se12040	Sep 10, 2018	Approximate Sample 177g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V2_B-C/4-5	18-Se12041	Sep 10, 2018	Approximate Sample 152g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V2_C/4-5	18-Se12042	Sep 10, 2018	Approximate Sample 130g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V2_C-D/4-5	18-Se12043	Sep 10, 2018	Approximate Sample 149g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

Asbestos - LTM-ASB-8020

Testing Site

Sydney

Extracted

Sep 10, 2018

Holding Time

Indefinite

Company Name: EI Australia

Address: Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

Project Name: SHOR RESERVE RD ST LEONARDS
Project ID: E23969.E07

Order No.:

Report #: 616777

Phone: 02 9516 0722

Fax:

Received:

Sep 10, 2018 5:40 PM

Due:

Sep 11, 2018

Priority:

Overnight

Contact Name:

Kate Warton

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Eurofins mgt Suite B7					
Moisture Set					
Asbestos - AS4964					
Melbourne Laboratory - NATA Site # 1254 & 14271					
Sydney Laboratory - NATA Site # 18217					
Brisbane Laboratory - NATA Site # 20794					
Perth Laboratory - NATA Site # 23736					
External Laboratory					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID
1	V2_B-C/3-4	Sep 10, 2018		Soil	S18-Se12039
2	V2_C-D/3-4	Sep 10, 2018		Soil	S18-Se12040
3	V2_B-C/4-5	Sep 10, 2018		Soil	S18-Se12041
4	V2_C/4-5	Sep 10, 2018		Soil	S18-Se12042
5	V2_C-D/4-5	Sep 10, 2018		Soil	S18-Se12043
Test Counts					5 5 5 5 5

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Sayed Abu	Senior Analyst-Asbestos (NSW)
-----------	-------------------------------

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)
-------------	-------------------------------



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Sample Receipt Advice

Company name: EI Australia
Contact name: - SRA/RESULTS
Project name: RESERVE ROAD ST LEONARDS
Project ID: E23969
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Sep 17, 2018 1:42 PM
Eurofins | mgt reference: 617942

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to - SRA/RESULTS - lab@eiaustralia.com.au.

Certificate of Analysis

El Australia
Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: - SRA/RESULTS

Report **617942-S**
Project name RESERVE ROAD ST LEONARDS
Project ID E23969
Received Date Sep 17, 2018

Client Sample ID			V3-AB/2-3	V3-CD/2-3
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-Se20740	S18-Se20741
Date Sampled			Sep 17, 2018	Sep 17, 2018
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	140	54
TRH C29-C36	50	mg/kg	93	60
TRH C10-36 (Total)	50	mg/kg	233	114
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	71	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	200	100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	200	100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	2.1	0.6
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	2.3	0.9
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	2.6	1.2
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
Benzo(a)anthracene	0.5	mg/kg	1.7	< 0.5
Benzo(a)pyrene	0.5	mg/kg	1.5	0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	1.3	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	0.9	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	1.2	< 0.5
Chrysene	0.5	mg/kg	1.3	< 0.5

Client Sample ID			V3-AB/2-3	V3-CD/2-3
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-Se20740	S18-Se20741
Date Sampled			Sep 17, 2018	Sep 17, 2018
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	3.8	1.1
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	1.2	0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	2.6	0.5
Pyrene	0.5	mg/kg	3.2	1.0
Total PAH*	0.5	mg/kg	18.7	3.6
2-Fluorobiphenyl (surr.)	1	%	83	82
p-Terphenyl-d14 (surr.)	1	%	87	87
Heavy Metals				
Arsenic	2	mg/kg	5.5	7.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	11	17
Copper	5	mg/kg	29	86
Lead	5	mg/kg	46	190
Mercury	0.1	mg/kg	0.1	0.5
Nickel	5	mg/kg	6.9	27
Zinc	5	mg/kg	52	110
% Moisture	1	%	18	3.9

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - LTM-ORG-2010	Sydney	Sep 19, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 19, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 19, 2018	14 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 19, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Sep 19, 2018	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Sep 19, 2018	28 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Sep 19, 2018	14 Day

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

Project Name: RESERVE ROAD ST LEONARDS
Project ID: E23969

Order No.:
Report #:
Phone:
Fax:

Received: Sep 17, 2018 1:42 PM
Due: Sep 20, 2018
Priority: 3 Day
Contact Name: - SRA/RESULTS

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Total Recoverable Hydrocarbons			X	X							X	X				
Moisture Set			X	X							X	X	X			
BTEX			X	X							X	X	X			
Metals M8			X	X							X	X	X			
Polycyclic Aromatic Hydrocarbons			X	X							X	X	X			
Asbestos - AS4964			X	X							X	X	X			
Sample Detail	Melbourne Laboratory - NATA Site # 1254 & 14271															
	Sydney Laboratory - NATA Site # 18217															
	Brisbane Laboratory - NATA Site # 20794															
	Perth Laboratory - NATA Site # 23736															
	External Laboratory															
	No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID										
	1	V3-AB/2-3	Sep 17, 2018		Soil	S18-Se20740										
	2	V3-CD/2-3	Sep 17, 2018		Soil	S18-Se20741										
	Test Counts												2	2	2	2

Internal Quality Control Review and Glossary

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. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 SRA. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

ppm: Parts per million

org/100mL: Organisms per 100 millilitres

mg/L: milligrams per litre

ppb: Parts per billion

NTU: Nephelometric Turbidity Units

ug/L: micrograms per litre

%: Percentage

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	mg/kg	< 20		20	Pass	
TRH C10-C14	mg/kg	< 20		20	Pass	
TRH C15-C28	mg/kg	< 50		50	Pass	
TRH C29-C36	mg/kg	< 50		50	Pass	
Method Blank						
BTEX						
Benzene	mg/kg	< 0.1		0.1	Pass	
Toluene	mg/kg	< 0.1		0.1	Pass	
Ethylbenzene	mg/kg	< 0.1		0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2		0.2	Pass	
o-Xylene	mg/kg	< 0.1		0.1	Pass	
Xylenes - Total	mg/kg	< 0.3		0.3	Pass	
Method Blank						
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene	mg/kg	< 0.5		0.5	Pass	
TRH C6-C10	mg/kg	< 20		20	Pass	
TRH >C10-C16	mg/kg	< 50		50	Pass	
TRH >C16-C34	mg/kg	< 100		100	Pass	
TRH >C34-C40	mg/kg	< 100		100	Pass	
Method Blank						
Polycyclic Aromatic Hydrocarbons						
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&j)fluoranthene	mg/kg	< 0.5		0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5		0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5		0.5	Pass	
Chrysene	mg/kg	< 0.5		0.5	Pass	
Dibenz(a,h)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(1,2,3-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	
Method Blank						
Heavy Metals						
Arsenic	mg/kg	< 2		2	Pass	
Cadmium	mg/kg	< 0.4		0.4	Pass	
Chromium	mg/kg	< 5		5	Pass	
Copper	mg/kg	< 5		5	Pass	
Lead	mg/kg	< 5		5	Pass	
Mercury	mg/kg	< 0.1		0.1	Pass	
Nickel	mg/kg	< 5		5	Pass	
Zinc	mg/kg	< 5		5	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	%	102		70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14			%	110			70-130	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	117			70-130	Pass	
Toluene			%	109			70-130	Pass	
Ethylbenzene			%	107			70-130	Pass	
m&p-Xylenes			%	113			70-130	Pass	
o-Xylene			%	111			70-130	Pass	
Xylenes - Total			%	112			70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
Naphthalene			%	94			70-130	Pass	
TRH C6-C10			%	111			70-130	Pass	
TRH >C10-C16			%	117			70-130	Pass	
LCS - % Recovery									
Polycyclic Aromatic Hydrocarbons									
Acenaphthene			%	105			70-130	Pass	
Acenaphthylene			%	102			70-130	Pass	
Anthracene			%	99			70-130	Pass	
Benz(a)anthracene			%	104			70-130	Pass	
Benzo(a)pyrene			%	93			70-130	Pass	
Benzo(b&j)fluoranthene			%	105			70-130	Pass	
Benzo(g,h,i)perylene			%	104			70-130	Pass	
Benzo(k)fluoranthene			%	104			70-130	Pass	
Chrysene			%	97			70-130	Pass	
Dibenz(a,h)anthracene			%	102			70-130	Pass	
Fluoranthene			%	97			70-130	Pass	
Fluorene			%	102			70-130	Pass	
Indeno(1,2,3-cd)pyrene			%	93			70-130	Pass	
Naphthalene			%	101			70-130	Pass	
Phenanthrene			%	99			70-130	Pass	
Pyrene			%	95			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	100			70-130	Pass	
Cadmium			%	103			70-130	Pass	
Chromium			%	107			70-130	Pass	
Copper			%	108			70-130	Pass	
Lead			%	106			70-130	Pass	
Mercury			%	108			70-130	Pass	
Nickel			%	105			70-130	Pass	
Zinc			%	105			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions									
TRH C6-C9	S18-Se20759	NCP	%	102			70-130	Pass	
Spike - % Recovery									
BTEX									
Benzene	S18-Se20759	NCP	%	108			70-130	Pass	
Toluene	S18-Se20759	NCP	%	105			70-130	Pass	
Ethylbenzene	S18-Se20759	NCP	%	104			70-130	Pass	
m&p-Xylenes	S18-Se20759	NCP	%	104			70-130	Pass	
o-Xylene	S18-Se20759	NCP	%	104			70-130	Pass	
Xylenes - Total	S18-Se20759	NCP	%	104			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-Se20759	NCP	%	125			70-130	Pass	
TRH C6-C10	S18-Se20759	NCP	%	114			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-Se21366	NCP	%	102			70-130	Pass	
Acenaphthylene	S18-Se21366	NCP	%	100			70-130	Pass	
Anthracene	S18-Se21366	NCP	%	95			70-130	Pass	
Benz(a)anthracene	S18-Se21366	NCP	%	107			70-130	Pass	
Benzo(a)pyrene	S18-Se21366	NCP	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Se21366	NCP	%	108			70-130	Pass	
Benzo(g,h,i)perylene	S18-Se21366	NCP	%	103			70-130	Pass	
Benzo(k)fluoranthene	S18-Se21366	NCP	%	99			70-130	Pass	
Chrysene	S18-Se21366	NCP	%	96			70-130	Pass	
Dibenz(a,h)anthracene	S18-Se21366	NCP	%	100			70-130	Pass	
Fluoranthene	S18-Se21366	NCP	%	102			70-130	Pass	
Fluorene	S18-Se21366	NCP	%	100			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-Se21366	NCP	%	99			70-130	Pass	
Naphthalene	S18-Se21366	NCP	%	99			70-130	Pass	
Phenanthrene	S18-Se21366	NCP	%	103			70-130	Pass	
Pyrene	S18-Se21366	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Se22827	NCP	%	104			70-130	Pass	
Cadmium	S18-Se22827	NCP	%	102			70-130	Pass	
Chromium	S18-Se22827	NCP	%	106			70-130	Pass	
Copper	S18-Se22827	NCP	%	106			70-130	Pass	
Lead	S18-Se22827	NCP	%	103			70-130	Pass	
Mercury	S18-Se22827	NCP	%	112			70-130	Pass	
Nickel	S18-Se22827	NCP	%	105			70-130	Pass	
Zinc	S18-Se22827	NCP	%	106			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-Se25013	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-Se25013	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-Se25013	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-Se25013	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-Se25013	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-Se25013	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-Se25013	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S18-Se25013	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S18-Se25013	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Benzo(a)pyrene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-Se21365	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-Se22826	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	S18-Se22826	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-Se22826	NCP	mg/kg	15	15	2.0	30%	Pass
Copper	S18-Se22826	NCP	mg/kg	63	65	2.0	30%	Pass
Lead	S18-Se22826	NCP	mg/kg	8.8	8.7	2.0	30%	Pass
Mercury	S18-Se23151	NCP	mg/kg	0.8	0.7	16	30%	Pass
Nickel	S18-Se22826	NCP	mg/kg	11	11	1.0	30%	Pass
Zinc	S18-Se22826	NCP	mg/kg	470	470	1.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-Se20740	CP	%	18	17	7.0	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QA/QC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya	Analytical Services Manager
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025-Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

El Australia
Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

Attention: - SRA/RESULTS
Report 617942-AID
Project Name RESERVE ROAD ST LEONARDS
Project ID E23969
Received Date Sep 17, 2018
Date Reported Sep 20, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w). The examination of large sample sizes (500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction. The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA (friable asbestos) and AF (asbestos fines) then applies where they are able to be quantified by gravimetric procedures. This quantitative screening is not generally applicable to FF (free fibres) and results of Trace Analysis are referred.

NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk). This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.

Project Name RESERVE ROAD ST LEONARDS
Project ID E23969
Date Sampled Sep 17, 2018
Report 617942-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
V3-AB/2-3	18-Se20740	Sep 17, 2018	Approximate Sample 176g Sample consisted of: Grey fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V3-CD/2-3	18-Se20741	Sep 17, 2018	Approximate Sample 124g Sample consisted of: Grey fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 17, 2018	Indefinite

Company Name:

Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name: RESERVE ROAD ST LEONARDS
Project ID: E23969

Order No.:

Report #: 617942
Phone: 02 9516 0722

Fax:

Received:

Due: Sep 17, 2018
Sep 20 2018

Priority: 3 Day

Contact Name:

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Sample Detail	Total Recoverable Hydrocarbons						X				X	X	X	2
	Moisture Set						X					X	X	2
	BTEX						X					X	X	2
	Metals M8						X					X	X	2
	Polycyclic Aromatic Hydrocarbons						X					X	X	2
	Asbestos - AS4964						X					X	X	2
	Melbourne Laboratory - NATA Site # 1254 & 14271													
	Sydney Laboratory - NATA Site # 18217													
	Brisbane Laboratory - NATA Site # 20794													
	Perth Laboratory - NATA Site # 23736													
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	V3-AB/2-3	Sep 17, 2018		Soil	S18-Se20740	X						X	X	2
2	V3-CD/2-3	Sep 17, 2018		Soil	S18-Se20741	X						X	X	2
Test Counts														

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Sayed Abu	Senior Analyst-Asbestos (NSW)
-----------	-------------------------------

Authorised by:

Nibha Vaidya	Senior Analyst-Asbestos (NSW)
--------------	-------------------------------



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Sample Receipt Advice

Company name: EI Australia
Contact name: - SRA/RESULTS
Project name: RESERV ROAD ST LEONARDS
Project ID: E23969
COC number: Not provided
Turn around time: 1 Day
Date/Time received: Sep 24, 2018 1:45 PM
Eurofins | mgt reference: 619189

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to - SRA/RESULTS - lab@eiaustralia.com.au.

Certificate of Analysis

El Australia
Suite 6.01, 55 Miller Street
Pymont
NSW 2009



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: - SRA/RESULTS

Report 619189-S
Project name RESERV ROAD ST LEONARDS
Project ID E23969
Received Date Sep 24, 2018

Client Sample ID			V4-C5	V4-C5S	V4-D5	V4-D5S
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Se31131	S18-Se31132	S18-Se31133	S18-Se31134
Date Sampled			Sep 24, 2018	Sep 24, 2018	Sep 24, 2018	Sep 24, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	53	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	53	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	64	77	74	79
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			V4-C5	V4-C5S	V4-D5	V4-D5S
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Se31131	S18-Se31132	S18-Se31133	S18-Se31134
Date Sampled			Sep 24, 2018	Sep 24, 2018	Sep 24, 2018	Sep 24, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	93	94	91	91
p-Terphenyl-d14 (surr.)	1	%	101	101	101	99
Heavy Metals						
Arsenic	2	mg/kg	14	7.5	5.8	13
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	56	29	19	36
Copper	5	mg/kg	< 5	31	< 5	9.4
Lead	5	mg/kg	20	90	24	40
Mercury	0.1	mg/kg	< 0.1	1.6	0.2	1.0
Nickel	5	mg/kg	< 5	11	< 5	< 5
Zinc	5	mg/kg	9.4	110	15	61
% Moisture	1	%	7.3	8.0	13	6.1

Client Sample ID			V5-AB-34	V5-AB-34S
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-Se31135	S18-Se31136
Date Sampled			Sep 24, 2018	Sep 24, 2018
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	73	67
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100

Client Sample ID			V5-AB-34	V5-AB-34S
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-Se31135	S18-Se31136
Date Sampled			Sep 24, 2018	Sep 24, 2018
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
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&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a,h)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(1,2,3-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
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	90	88
p-Terphenyl-d14 (surr.)	1	%	98	96
Heavy Metals				
Arsenic	2	mg/kg	< 2	7.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	< 5	23
Copper	5	mg/kg	< 5	5.9
Lead	5	mg/kg	14	33
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5
Zinc	5	mg/kg	12	69
% Moisture	1	%	9.5	9.3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - LTM-ORG-2010	Sydney	Sep 24, 2018	14 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 24, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 24, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 24, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Sep 24, 2018	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Sep 24, 2018	28 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Sep 24, 2018	14 Day

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name: RESERV ROAD ST LEONARDS
Project ID: E23969

Order No.:
Report #: 619189
Phone: 02 9516 0722
Fax:

Received: Sep 24, 2018 1:45 PM
Due: Sep 25, 2018
Priority: 1 Day
Contact Name: - SRA/RESULTS

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Eurofins mgt Suite B7					
Moisture Set					
Asbestos - AS4964					
Melbourne Laboratory - NATA Site # 1254 & 14271					
Sydney Laboratory - NATA Site # 18217					
Brisbane Laboratory - NATA Site # 20794					
Perth Laboratory - NATA Site # 23736					
External Laboratory					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID
1	V4-C5	Sep 24, 2018		Soil	S18-Se31131
2	V4-C5S	Sep 24, 2018		Soil	S18-Se31132
3	V4-D5	Sep 24, 2018		Soil	S18-Se31133
4	V4-D5S	Sep 24, 2018		Soil	S18-Se31134
5	V5-AB-34	Sep 24, 2018		Soil	S18-Se31135
6	V5-AB-34S	Sep 24, 2018		Soil	S18-Se31136
Test Counts					6 6 6 6

Internal Quality Control Review and Glossary

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. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	mg/kg	< 20		20	Pass	
TRH C10-C14	mg/kg	< 20		20	Pass	
TRH C15-C28	mg/kg	< 50		50	Pass	
TRH C29-C36	mg/kg	< 50		50	Pass	
Method Blank						
BTEX						
Benzene	mg/kg	< 0.1		0.1	Pass	
Toluene	mg/kg	< 0.1		0.1	Pass	
Ethylbenzene	mg/kg	< 0.1		0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2		0.2	Pass	
o-Xylene	mg/kg	< 0.1		0.1	Pass	
Xylenes - Total	mg/kg	< 0.3		0.3	Pass	
Method Blank						
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene	mg/kg	< 0.5		0.5	Pass	
TRH C6-C10	mg/kg	< 20		20	Pass	
TRH >C10-C16	mg/kg	< 50		50	Pass	
TRH >C16-C34	mg/kg	< 100		100	Pass	
TRH >C34-C40	mg/kg	< 100		100	Pass	
Method Blank						
Polycyclic Aromatic Hydrocarbons						
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&j)fluoranthene	mg/kg	< 0.5		0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5		0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5		0.5	Pass	
Chrysene	mg/kg	< 0.5		0.5	Pass	
Dibenz(a,h)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(1,2,3-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	
Method Blank						
Heavy Metals						
Arsenic	mg/kg	< 2		2	Pass	
Cadmium	mg/kg	< 0.4		0.4	Pass	
Chromium	mg/kg	< 5		5	Pass	
Copper	mg/kg	< 5		5	Pass	
Lead	mg/kg	< 5		5	Pass	
Mercury	mg/kg	< 0.1		0.1	Pass	
Nickel	mg/kg	< 5		5	Pass	
Zinc	mg/kg	< 5		5	Pass	
LCS - % Recovery						
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	%	109		70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14				%	85			70-130	Pass	
LCS - % Recovery										
BTEX										
Benzene				%	104			70-130	Pass	
Toluene				%	105			70-130	Pass	
Ethylbenzene				%	106			70-130	Pass	
m&p-Xylenes				%	108			70-130	Pass	
o-Xylene				%	110			70-130	Pass	
Xylenes - Total				%	109			70-130	Pass	
LCS - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions										
Naphthalene				%	122			70-130	Pass	
TRH C6-C10				%	103			70-130	Pass	
TRH >C10-C16				%	91			70-130	Pass	
LCS - % Recovery										
Polycyclic Aromatic Hydrocarbons										
Acenaphthene				%	70			70-130	Pass	
Acenaphthylene				%	82			70-130	Pass	
Anthracene				%	82			70-130	Pass	
Benz(a)anthracene				%	78			70-130	Pass	
Benzo(a)pyrene				%	84			70-130	Pass	
Benzo(b&j)fluoranthene				%	77			70-130	Pass	
Benzo(g,h,i)perylene				%	80			70-130	Pass	
Benzo(k)fluoranthene				%	86			70-130	Pass	
Chrysene				%	86			70-130	Pass	
Dibenz(a,h)anthracene				%	79			70-130	Pass	
Fluoranthene				%	76			70-130	Pass	
Fluorene				%	81			70-130	Pass	
Indeno(1.2.3-cd)pyrene				%	78			70-130	Pass	
Naphthalene				%	80			70-130	Pass	
Phenanthrene				%	83			70-130	Pass	
Pyrene				%	77			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	97			70-130	Pass	
Cadmium				%	96			70-130	Pass	
Chromium				%	103			70-130	Pass	
Copper				%	104			70-130	Pass	
Lead				%	104			70-130	Pass	
Mercury				%	100			70-130	Pass	
Nickel				%	104			70-130	Pass	
Zinc				%	104			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons										
Benzo(g,h,i)perylene					Result 1			70-130	Pass	
Spike - % Recovery										
Heavy Metals										
Arsenic					Result 1			70-130	Pass	
Cadmium								70-130	Pass	
Chromium								70-130	Pass	
Copper								70-130	Pass	
Lead								70-130	Pass	
Mercury								70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	S18-Se29039	NCP	%	123			70-130	Pass	
Zinc	S18-Se29039	NCP	%	124			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-Se31132	CP	%	91			70-130	Pass	
TRH C10-C14	S18-Se31132	CP	%	84			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-Se31132	CP	%	98			70-130	Pass	
Toluene	S18-Se31132	CP	%	100			70-130	Pass	
Ethylbenzene	S18-Se31132	CP	%	98			70-130	Pass	
m&p-Xylenes	S18-Se31132	CP	%	99			70-130	Pass	
o-Xylene	S18-Se31132	CP	%	99			70-130	Pass	
Xylenes - Total	S18-Se31132	CP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-Se31132	CP	%	87			70-130	Pass	
TRH C6-C10	S18-Se31132	CP	%	87			70-130	Pass	
TRH >C10-C16	S18-Se31132	CP	%	90			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-Se31132	CP	%	72			70-130	Pass	
Acenaphthylene	S18-Se31132	CP	%	81			70-130	Pass	
Anthracene	S18-Se31132	CP	%	79			70-130	Pass	
Benz(a)anthracene	S18-Se31132	CP	%	78			70-130	Pass	
Benzo(a)pyrene	S18-Se31132	CP	%	78			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Se31132	CP	%	70			70-130	Pass	
Benzo(k)fluoranthene	S18-Se31132	CP	%	85			70-130	Pass	
Chrysene	S18-Se31132	CP	%	83			70-130	Pass	
Dibenz(a,h)anthracene	S18-Se31132	CP	%	73			70-130	Pass	
Fluoranthene	S18-Se31132	CP	%	80			70-130	Pass	
Fluorene	S18-Se31132	CP	%	79			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-Se31132	CP	%	72			70-130	Pass	
Naphthalene	S18-Se31132	CP	%	79			70-130	Pass	
Phenanthrene	S18-Se31132	CP	%	78			70-130	Pass	
Pyrene	S18-Se31132	CP	%	79			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-Se31131	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S18-Se31131	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S18-Se31131	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S18-Se31131	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-Se31131	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-Se31131	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-Se31131	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-Se31131	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-Se31131	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-Se31131	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-Se311131	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S18-Se311131	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S18-Se311131	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S18-Se311131	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-Se311131	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-Se29038	NCP	mg/kg	6.0	5.0	18	30%	Pass
Cadmium	S18-Se30796	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-Se29038	NCP	mg/kg	14	14	3.0	30%	Pass
Copper	S18-Se29038	NCP	mg/kg	15	15	4.0	30%	Pass
Lead	S18-Se29038	NCP	mg/kg	16	14	13	30%	Pass
Mercury	S18-Se29038	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-Se29038	NCP	mg/kg	20	17	17	30%	Pass
Zinc	S18-Se29038	NCP	mg/kg	43	45	4.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-Se311135	CP	%	9.5	11	19	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QA/QC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya	Analytical Services Manager
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis



NATA Accredited

Accreditation Number 1261

Site Number 18217

Accredited for compliance with ISO/IEC 17025-Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards

El Australia
Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Attention: - SRA/RESULTS
Report 619189-AID
Project Name RESERV ROAD ST LEONARDS
Project ID E23969
Received Date Sep 24, 2018
Date Reported Sep 25, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w). The examination of large sample sizes (500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction. The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA (friable asbestos) and AF (asbestos fines) then applies where they are able to be quantified by gravimetric procedures. This quantitative screening is not generally applicable to FF (free fibres) and results of Trace Analysis are referred.

NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk). This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.

Project Name RESERV ROAD ST LEONARDS
Project ID E23969
Date Sampled Sep 24, 2018
Report 619189-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
V4-C5	18-Se31131	Sep 24, 2018	Approximate Sample 181g Sample consisted of: Tan fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V4-C5S	18-Se31132	Sep 24, 2018	Approximate Sample 159g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V4-D5	18-Se31133	Sep 24, 2018	Approximate Sample 142g Sample consisted of: Brown fine-grained clayey soil and sand stone	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V4-D5S	18-Se31134	Sep 24, 2018	Approximate Sample 162g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V5-AB-34	18-Se31135	Sep 24, 2018	Approximate Sample 119g Sample consisted of: Grey fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V5-AB-34S	18-Se31136	Sep 24, 2018	Approximate Sample 150g Sample consisted of: Pinkish-beige fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 24, 2018	Indefinite

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009
Project Name: RESERV ROAD ST LEONARDS
Project ID: E23969

Order No.: 619189
Report #: 02 9516 0722
Phone:
Fax:

Received: Sep 24, 2018 1:45 PM
Due: Sep 25, 2018
Priority: 1 Day
Contact Name: - SRA/RESULTS

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Eurofins mgt Suite B7					
Moisture Set					
Asbestos - AS4964					
Melbourne Laboratory - NATA Site # 1254 & 14271					
Sydney Laboratory - NATA Site # 18217					
Brisbane Laboratory - NATA Site # 20794					
Perth Laboratory - NATA Site # 23736					
External Laboratory					
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID
1	V4-C5	Sep 24, 2018		Soil	S18-Se31131
2	V4-C5S	Sep 24, 2018		Soil	S18-Se31132
3	V4-D5	Sep 24, 2018		Soil	S18-Se31133
4	V4-D5S	Sep 24, 2018		Soil	S18-Se31134
5	V5-AB-34	Sep 24, 2018		Soil	S18-Se31135
6	V5-AB-34S	Sep 24, 2018		Soil	S18-Se31136
Test Counts					6

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Sayed Abu	Senior Analyst-Asbestos (NSW)
-----------	-------------------------------

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)
-------------	-------------------------------



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Sample Receipt Advice

Company name: EI Australia
Contact name: - SRA/RESULTS
Project name: RESERV ROAD ST LEONARDS
Project ID: E23969
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Sep 27, 2018 4:49 PM
Eurofins | mgt reference: 619956

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to - SRA/RESULTS - lab@eiaustralia.com.au.

Certificate of Analysis

EI Australia
 Suite 6.01, 55 Miller Street
 Pyrmont
 NSW 2009



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: - SRA/RESULTS

Report **619956-S**
 Project name RESERV ROAD ST LEONARDS
 Project ID E23969
 Received Date Sep 27, 2018

Client Sample ID			V6-AB5	V6-AB5S	V6-AB5S2	V6-BC5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Se36472	S18-Se36473	S18-Se36474	S18-Se36475
Date Sampled			Sep 27, 2018	Sep 27, 2018	Sep 27, 2018	Sep 27, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	56	75	70	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			V6-AB5	V6-AB5S	V6-AB5S2	V6-BC5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Se36472	S18-Se36473	S18-Se36474	S18-Se36475
Date Sampled			Sep 27, 2018	Sep 27, 2018	Sep 27, 2018	Sep 27, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	1.2	< 0.5
2-Fluorobiphenyl (surr.)	1	%	91	99	100	96
p-Terphenyl-d14 (surr.)	1	%	79	97	99	96
Heavy Metals						
Arsenic	2	mg/kg	8.1	7.2	21	7.1
Cadmium	0.4	mg/kg	< 0.4	0.5	< 0.4	< 0.4
Chromium	5	mg/kg	30	22	19	25
Copper	5	mg/kg	6.8	150	83	< 5
Lead	5	mg/kg	29	240	190	18
Mercury	0.1	mg/kg	< 0.1	0.1	0.1	< 0.1
Nickel	5	mg/kg	< 5	81	13	< 5
Zinc	5	mg/kg	25	260	170	5.1
% Moisture	1	%	11	8.1	12	11

Client Sample ID			V6-BC5S
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-Se36476
Date Sampled			Sep 27, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	60
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	60
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	69
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100

Client Sample ID			V6-BC5S
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-Se36476
Date Sampled			Sep 27, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	0.9
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.2
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.5
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	0.7
Benzo(a)pyrene	0.5	mg/kg	0.7
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	0.8
Benzo(g,h,i)perylene	0.5	mg/kg	0.6
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	0.7
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	1.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	0.9
Pyrene	0.5	mg/kg	1.5
Total PAH*	0.5	mg/kg	7.4
2-Fluorobiphenyl (surr.)	1	%	103
p-Terphenyl-d14 (surr.)	1	%	103
Heavy Metals			
Arsenic	2	mg/kg	6.4
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	18
Copper	5	mg/kg	49
Lead	5	mg/kg	89
Mercury	0.1	mg/kg	1.4
Nickel	5	mg/kg	11
Zinc	5	mg/kg	120
% Moisture	1	%	8.3

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: TRH C6-C36 - LTM-ORG-2010	Sydney	Sep 27, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 27, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 27, 2018	14 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 27, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Sep 27, 2018	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Sep 27, 2018	28 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Sep 27, 2018	14 Day

Company Name:

Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name: RESERV ROAD ST LEONARDS
Project ID: E23969

Order No.:

Report #: 619956

Phone: 02 9516 0722

Fax:

Received:

Due: Oct 3, 2018

Priority: 3 Day

Contact Name: - SRA/RESULTS

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Sample Detail							Total Recoverable Hydrocarbons				
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		Moisture Set	BTEX	Metals M8	Polycyclic Aromatic Hydrocarbons	Asbestos - AS4964
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217							X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
External Laboratory											
1	V6-AB5	Sep 27, 2018		Soil	S18-Se36472	X	X	X	X	X	X
2	V6-AB5S	Sep 27, 2018		Soil	S18-Se36473	X	X	X	X	X	X
3	V6-AB5S2	Sep 27, 2018		Soil	S18-Se36474	X	X	X	X	X	X
4	V6-BC5	Sep 27, 2018		Soil	S18-Se36475	X	X	X	X	X	X
5	V6-BC5S	Sep 27, 2018		Soil	S18-Se36476	X	X	X	X	X	X
Test Counts							5	5	5	5	5

Internal Quality Control Review and Glossary

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. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 SRA. If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results ≥20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
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&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)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(1,2,3-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	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	95			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14				%	110			70-130	Pass	
LCS - % Recovery										
BTEX										
Benzene				%	115			70-130	Pass	
Toluene				%	100			70-130	Pass	
Ethylbenzene				%	97			70-130	Pass	
m&p-Xylenes				%	101			70-130	Pass	
o-Xylene				%	101			70-130	Pass	
Xylenes - Total				%	101			70-130	Pass	
LCS - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions										
Naphthalene				%	123			70-130	Pass	
TRH C6-C10				%	93			70-130	Pass	
TRH >C10-C16				%	98			70-130	Pass	
LCS - % Recovery										
Polycyclic Aromatic Hydrocarbons										
Acenaphthene				%	81			70-130	Pass	
Acenaphthylene				%	93			70-130	Pass	
Anthracene				%	92			70-130	Pass	
Benz(a)anthracene				%	89			70-130	Pass	
Benzo(a)pyrene				%	88			70-130	Pass	
Benzo(b&j)fluoranthene				%	88			70-130	Pass	
Benzo(g,h,i)perylene				%	96			70-130	Pass	
Benzo(k)fluoranthene				%	87			70-130	Pass	
Chrysene				%	90			70-130	Pass	
Dibenz(a,h)anthracene				%	94			70-130	Pass	
Fluoranthene				%	92			70-130	Pass	
Fluorene				%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene				%	89			70-130	Pass	
Naphthalene				%	91			70-130	Pass	
Phenanthrene				%	94			70-130	Pass	
Pyrene				%	92			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	92			70-130	Pass	
Cadmium				%	91			70-130	Pass	
Chromium				%	96			70-130	Pass	
Copper				%	100			70-130	Pass	
Lead				%	97			70-130	Pass	
Mercury				%	97			70-130	Pass	
Nickel				%	96			70-130	Pass	
Zinc				%	91			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1				Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					Result 1					
TRH C10-C14	S18-Se37092	NCP	%	98				70-130	Pass	
Spike - % Recovery										
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					Result 1					
TRH >C10-C16	S18-Se37092	NCP	%	120				70-130	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthene	S18-Se31054	NCP	%	79				70-130	Pass	
Acenaphthylene	S18-Se31054	NCP	%	87				70-130	Pass	
Anthracene	S18-Se31054	NCP	%	87				70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benz(a)anthracene	S18-Se31054	NCP	%	80			70-130	Pass	
Benzo(a)pyrene	S18-Se31054	NCP	%	76			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Se31054	NCP	%	78			70-130	Pass	
Benzo(g,h,i)perylene	S18-Se31054	NCP	%	87			70-130	Pass	
Benzo(k)fluoranthene	S18-Se31054	NCP	%	75			70-130	Pass	
Chrysene	S18-Se31054	NCP	%	81			70-130	Pass	
Dibenz(a,h)anthracene	S18-Se31054	NCP	%	86			70-130	Pass	
Fluoranthene	S18-Se31054	NCP	%	81			70-130	Pass	
Fluorene	S18-Se31054	NCP	%	84			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-Se31054	NCP	%	81			70-130	Pass	
Naphthalene	S18-Se31054	NCP	%	85			70-130	Pass	
Phenanthrene	S18-Se31054	NCP	%	86			70-130	Pass	
Pyrene	S18-Se31054	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Se36455	NCP	%	89			70-130	Pass	
Cadmium	S18-Se36455	NCP	%	89			70-130	Pass	
Chromium	S18-Se36455	NCP	%	84			70-130	Pass	
Copper	S18-Se36455	NCP	%	87			70-130	Pass	
Lead	S18-Se36455	NCP	%	88			70-130	Pass	
Mercury	S18-Se36455	NCP	%	98			70-130	Pass	
Nickel	S18-Se36455	NCP	%	101			70-130	Pass	
Zinc	S18-Se36455	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-Se36474	CP	%	91			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-Se36474	CP	%	98			70-130	Pass	
Toluene	S18-Se36474	CP	%	99			70-130	Pass	
Ethylbenzene	S18-Se36474	CP	%	98			70-130	Pass	
m&p-Xylenes	S18-Se36474	CP	%	101			70-130	Pass	
o-Xylene	S18-Se36474	CP	%	101			70-130	Pass	
Xylenes - Total	S18-Se36474	CP	%	101			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-Se36474	CP	%	90			70-130	Pass	
TRH C6-C10	S18-Se36474	CP	%	88			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S18-Se36275	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S18-Se36275	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S18-Se36275	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S18-Se36275	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S18-Se36275	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S18-Se36275	NCP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-Se36454	NCP	mg/kg	13	12	3.0	30%	Pass
Cadmium	S18-Se36454	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-Se36454	NCP	mg/kg	20	20	<1	30%	Pass
Copper	S18-Se36454	NCP	mg/kg	27	24	10	30%	Pass
Lead	S18-Se36454	NCP	mg/kg	14	13	7.0	30%	Pass
Mercury	S18-Se36454	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-Se36454	NCP	mg/kg	36	30	17	30%	Pass
Zinc	S18-Se36454	NCP	mg/kg	65	57	14	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S18-Se36473	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S18-Se36473	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S18-Se36473	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S18-Se36473	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S18-Se36473	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S18-Se36473	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S18-Se36473	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-Se36473	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-Se36473	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-Se36476	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-Se36476	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-Se36476	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-Se36476	CP	mg/kg	0.7	0.8	11	30%	Pass
Benzo(a)pyrene	S18-Se36476	CP	mg/kg	0.7	0.8	12	30%	Pass
Benzo(b&j)fluoranthene	S18-Se36476	CP	mg/kg	0.8	0.9	15	30%	Pass
Benzo(g,h,i)perylene	S18-Se36476	CP	mg/kg	0.6	0.7	13	30%	Pass
Benzo(k)fluoranthene	S18-Se36476	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-Se36476	CP	mg/kg	0.7	0.7	6.0	30%	Pass
Dibenz(a,h)anthracene	S18-Se36476	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-Se36476	CP	mg/kg	1.5	1.6	3.0	30%	Pass
Fluorene	S18-Se36476	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-Se36476	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-Se36476	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-Se36476	CP	mg/kg	0.9	0.6	38	30%	Fail
Pyrene	S18-Se36476	CP	mg/kg	1.5	1.5	1.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-Se36476	CP	%	8.3	6.3	27	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya Analytical Services Manager
 Nibha Vaidya Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025-Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards

El Australia
Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

Attention: - SRA/RESULTS
Report 619956-AID
Project Name RESERV ROAD ST LEONARDS
Project ID E23969
Received Date Sep 27, 2018
Date Reported Oct 03, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w). The examination of large sample sizes (500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction. The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA (friable asbestos) and AF (asbestos fines) then applies where they are able to be quantified by gravimetric procedures. This quantitative screening is not generally applicable to FF (free fibres) and results of Trace Analysis are referred.

NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk). This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.

Project Name RESERV ROAD ST LEONARDS
Project ID E23969
Date Sampled Sep 27, 2018
Report 619956-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
V6-AB5	18-Se36472	Sep 27, 2018	Approximate Sample 142g Sample consisted of: Brown fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V6-AB5S	18-Se36473	Sep 27, 2018	Approximate Sample 111g Sample consisted of: Brown fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V6-AB5S2	18-Se36474	Sep 27, 2018	Approximate Sample 123g Sample consisted of: Tan fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V6-BC5	18-Se36475	Sep 27, 2018	Approximate Sample 120g Sample consisted of: Grey fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V6-BC5S	18-Se36476	Sep 27, 2018	Approximate Sample 181g Sample consisted of: Tan fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Sep 27, 2018	Indefinite

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009
Project Name: RESERV ROAD ST LEONARDS
Project ID: E23969

Order No.: 619956
Report #: 02 9516 0722
Phone:
Fax:

Received: Sep 27, 2018 4:49 PM
Due: Oct 3, 2018
Priority: 3 Day
Contact Name: - SRA/RESULTS

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

						Asbestos - AS4964	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	V6-AB5	Sep 27, 2018		Soil	S18-Se36472	X	X	X	X	X	X
2	V6-AB5S	Sep 27, 2018		Soil	S18-Se36473	X	X	X	X	X	X
3	V6-AB5S2	Sep 27, 2018		Soil	S18-Se36474	X	X	X	X	X	X
4	V6-BC5	Sep 27, 2018		Soil	S18-Se36475	X	X	X	X	X	X
5	V6-BC5S	Sep 27, 2018		Soil	S18-Se36476	X	X	X	X	X	X
Test Counts						5	5	5	5	5	5

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Sayed Abu Senior Analyst-Asbestos (NSW)

Authorised by:

Nibha Vaidya Senior Analyst-Asbestos (NSW)



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

622964

Sheet <u>1</u> of <u>1</u>		Project No: <u>622964</u>		Site: <u>Reserve Road, St Leonards</u>		Laboratory: <u>Eurofins Environment Testing Aust. P/L</u> <u>6 / 16 Mars Road,</u> <u>SYDNEY NSW 2066</u> <u>P: 02 9900 8400</u>		Sample Matrix		Analysis										Comments		
Sample ID	Laboratory ID	Container Type	Sampling		WATER	SOIL	OTHERS (ie. Fibro, Paint, etc.)	HM Δ / TRH/BTEX/PAHs	OTHER/POB/Asbestos	HM Δ / TRH/BTEX/PAHs	HM Δ / TRH/BTEX	BTEX	VOCs	Asbestos	Asbestos Quantification	pH / CEC (cation exchange)	pH / EC (electrical conductivity)	Dewatering Suite	sPOCAS	PFAS	TCLP HM Δ / PAH	HM Δ Arsenic Cadmium Chromium Copper Lead Mercury Nickel Zinc HM Δ Arsenic Cadmium Chromium Lead Mercury Nickel Dewatering Suite pH & EC TDS / TDU Hardness Total Cyanide Metals (Al, As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) TRH (F1, F2, F3, F4) BTEX PAH Total Phenol
			Date	Time																		
V7_A/B-4/5		J, ZLB	17/10/18	AM		X		X														
V7_B/C-3/4								X														
V7_B/C-2/3								X														
V7_D/E-2/3								X														
V7_D/E-3/4								X														
V7_D/E-4/5								X														
V7_D/E-5/6								X														
QD1		J						X														
QD2		J						X														

Container type:
 J= solvent washed, acid rinsed, Teflon sealed, glass jar
 S= solvent washed, acid rinsed glass bottle
 P= natural HDPE plastic bottle
 VC= glass vial, Teflon Septum
 ZLB = Zip-Lock Bag

Investigator: I attest that these samples were collected in accordance with standard EI field sampling procedures.

Sampler's Name (EI):	Received by (Eurofins):
Print	Print
Signature	Signature
Date	Date
17/10/18	17/10/18 3:20pm

IMPORTANT:
 Please e-mail laboratory results to: lab@eiaustralia.com.au

Suite 6.01, 55 Miller Street,
 PYRMONT NSW 2009
 Ph: 9516 0722
lab@eiaustralia.com.au

COC March 2018 FORM 4.4 - 563

Report with EI Waste Classification Table ☐

Sampler's Comments:

Enviro Sample Vic

From: Nibha Vaidya
Sent: Tuesday, 30 October 2018 11:09 AM
To: Enviro Sample Vic
Cc: Asim Khan; Alena Bounkeua
Subject: 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 622964 : Site RESERVE ROAD ST LEONARDS (E23969)
Attachments: image001.png
Importance: High
Follow Up Flag: Follow up
Flag Status: Flagged

Additional BIS please - 1 day TAT

Kind Regards,

Nibha Vaidya
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Email : NibhaVaidya@eurofins.com


30/10/2018

From: Nathan Spanos - EIAustralia [<mailto:nathan.spanos@eiaustralia.com.au>]
Sent: Tuesday, 30 October 2018 11:08 AM
To: Asim Khan
Cc: Enviro Sample NSW
Subject: RE: Eurofins | mgt Test Results - Report 622964 : Site RESERVE ROAD ST LEONARDS (E23969)

5044

Hi Asim,

I will need further testing for OCP, OPP and PCBs on a 24 hour turnaround time for all samples except QD1 and QD2.

Thanks,

Nathan Spanos | Environmental Scientist

QD1: OC 20351 - 91496
QD2: OC 20352 - 91497

S.D 17/10

OC 20344 - 50 91496


eiaustralia

Environmental Australia | Environmental Quality | Environmental Health



E: nathan.spanos@eiaustralia.com.au

T: 02 9900 8415 M: 0499 900 805

EIA All Year
Suite 01 Pacific Street Pyrmont NSW 2009
www.eiaustralia.com.au

Sample Receipt Advice

Company name: **El Australia**
Contact name: **Nathan Spanos**
Project name: **RESERVE ROAD ST LEONARDS**
Project ID: **E23969**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Oct 17, 2018 3:20 PM**
Eurofins | mgt reference: **622964**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Nathan Spanos - nathan.spanos@eiaustralia.com.au.

Sample Receipt Advice

Company name: EI Australia
Contact name: Nathan Spanos
Project name: RESERVE ROAD ST LEONARDS
Project ID: E23969
COC number: Not provided
Turn around time: 1 Day
Date/Time received: Oct 30, 2018 11:09 AM
Eurofins | mgt reference: 625044

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Nathan Spanos - nathan.spanos@eiaustralia.com.au.

Certificate of Analysis

El Australia
Suite 6.01, 55 Miller Street
Pymont
NSW 2009



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Nathan Spanos**

Report **622964-S**
 Project name **RESERVE ROAD ST LEONARDS**
 Project ID **E23969**
 Received Date **Oct 17, 2018**

Client Sample ID			V7_A/B-4/5	V7_B/C-3/4	V7_B/C-2/3	V7_D/E-2/3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Oc20344	S18-Oc20345	S18-Oc20346	S18-Oc20347
Date Sampled			Oct 17, 2018	Oct 17, 2018	Oct 17, 2018	Oct 17, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	113	117	108	117
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			V7_A/B-4/5 Soil	V7_B/C-3/4 Soil	V7_B/C-2/3 Soil	V7_D/E-2/3 Soil
Sample Matrix			S18-Oc20344	S18-Oc20345	S18-Oc20346	S18-Oc20347
Eurofins mgt Sample No.			Oct 17, 2018	Oct 17, 2018	Oct 17, 2018	Oct 17, 2018
Date Sampled						
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	112	100	114	96
p-Terphenyl-d14 (surr.)	1	%	123	119	125	115
Heavy Metals						
Arsenic	2	mg/kg	3.3	4.0	5.8	6.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	7.9	13	11	14
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	22	11	18	19
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	< 5	5.2	< 5
% Moisture	1	%	19	21	19	16

Client Sample ID			V7_D/E-3/4 Soil	V7_D/E-4/5 Soil	V7_D/E-5/6 Soil	QD1 Soil
Sample Matrix			S18-Oc20348	S18-Oc20349	S18-Oc20350	S18-Oc20351
Eurofins mgt Sample No.			Oct 17, 2018	Oct 17, 2018	Oct 17, 2018	Oct 17, 2018
Date Sampled						
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	106	108	111	119
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			V7_D/E-3/4	V7_D/E-4/5	V7_D/E-5/6	QD1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Oc20348	S18-Oc20349	S18-Oc20350	S18-Oc20351
Date Sampled			Oct 17, 2018	Oct 17, 2018	Oct 17, 2018	Oct 17, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	99	116	90	94
p-Terphenyl-d14 (surr.)	1	%	88	145	120	126
Heavy Metals						
Arsenic	2	mg/kg	2.9	7.8	3.6	6.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	13	16	11	17
Copper	5	mg/kg	11	< 5	< 5	< 5
Lead	5	mg/kg	14	18	19	23
Mercury	0.1	mg/kg	< 0.1	0.5	0.4	< 0.1
Nickel	5	mg/kg	11	< 5	< 5	< 5
Zinc	5	mg/kg	16	6.1	5.1	6.8
% Moisture	1	%	16	23	17	17

Client Sample ID			QD2
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-Oc20352
Date Sampled			Oct 17, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-36 (Total)	50	mg/kg	< 50

Client Sample ID			QD2
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-Oc20352
Date Sampled			Oct 17, 2018
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
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&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1,2,3-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
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	107
p-Terphenyl-d14 (surr.)	1	%	124
Heavy Metals			
Arsenic	2	mg/kg	2.5
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	< 5
Copper	5	mg/kg	< 5
Lead	5	mg/kg	7.6
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	< 5
Zinc	5	mg/kg	< 5
% Moisture			
% Moisture	1	%	15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins mgt Suite B7			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Oct 20, 2018	14 Day
BTEX - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Melbourne	Oct 20, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Oct 20, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Oct 20, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Oct 20, 2018	14 Day
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Oct 20, 2018	28 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Melbourne	Oct 17, 2018	14 Day

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name: RESERVE ROAD ST LEONARDS
Project ID: E23969

Order No.:
Report #: 622964
Phone: 02 9516 0722
Fax:

Received: Oct 17, 2018 3:20 PM
Due: Oct 24, 2018
Priority: 5 Day
Contact Name: Nathan Spanos

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Sample Detail						
	Eurofins mgt Suite B7					
Moisture Set		X				
Asbestos - AS4964			X			
	Melbourne Laboratory - NATA Site # 1254 & 14271					
	Sydney Laboratory - NATA Site # 18217					
	Brisbane Laboratory - NATA Site # 20794					
	Perth Laboratory - NATA Site # 23736					
	External Laboratory					
	No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID
	1	V7_A/B-4/5	Oct 17, 2018		Soil	S18-Oct20344
	2	V7_B/C-3/4	Oct 17, 2018		Soil	S18-Oct20345
	3	V7_B/C-2/3	Oct 17, 2018		Soil	S18-Oct20346
	4	V7_D/E-2/3	Oct 17, 2018		Soil	S18-Oct20347
5	V7_D/E-3/4	Oct 17, 2018		Soil	S18-Oct20348	
6	V7_D/E-4/5	Oct 17, 2018		Soil	S18-Oct20349	
7	V7_D/E-5/6	Oct 17, 2018		Soil	S18-Oct20350	
8	QD1	Oct 17, 2018		Soil	S18-Oct20351	
9	QD2	Oct 17, 2018		Soil	S18-Oct20352	

Company Name:

EI Australia

Address:

Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name:

RESERVE ROAD ST LEONARDS

Project ID:

E23969

Order No.:

622964

Report #:

02 9516 0722

Phone:

Fax:

Received:

Oct 17, 2018 3:20 PM

Due:

Oct 24, 2018

Priority:

5 Day

Contact Name:

Nathan Spanos

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail			
Eurofins mgt Suite B7			
Moisture Set			
Asbestos - AS4964			
Melbourne Laboratory - NATA Site # 1254 & 14271	X	X	
Sydney Laboratory - NATA Site # 18217	X		
Brisbane Laboratory - NATA Site # 20794			
Perth Laboratory - NATA Site # 23736			
Test Counts	7	9	9

Internal Quality Control Review and Glossary

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. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
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&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)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(1.2.3-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	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	115			70-130	Pass	

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14			%	102		70-130	Pass	
LCS - % Recovery								
BTEX								
Benzene			%	96		70-130	Pass	
Toluene			%	108		70-130	Pass	
Ethylbenzene			%	103		70-130	Pass	
m&p-Xylenes			%	96		70-130	Pass	
Xylenes - Total			%	102		70-130	Pass	
LCS - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions								
Naphthalene			%	89		70-130	Pass	
TRH C6-C10			%	109		70-130	Pass	
TRH >C10-C16			%	105		70-130	Pass	
LCS - % Recovery								
Polycyclic Aromatic Hydrocarbons								
Acenaphthene			%	102		70-130	Pass	
Acenaphthylene			%	108		70-130	Pass	
Anthracene			%	111		70-130	Pass	
Benz(a)anthracene			%	87		70-130	Pass	
Benzo(a)pyrene			%	97		70-130	Pass	
Benzo(b&j)fluoranthene			%	99		70-130	Pass	
Benzo(g,h,i)perylene			%	76		70-130	Pass	
Benzo(k)fluoranthene			%	97		70-130	Pass	
Chrysene			%	103		70-130	Pass	
Dibenz(a,h)anthracene			%	77		70-130	Pass	
Fluoranthene			%	104		70-130	Pass	
Fluorene			%	101		70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	75		70-130	Pass	
Naphthalene			%	104		70-130	Pass	
Phenanthrene			%	102		70-130	Pass	
Pyrene			%	103		70-130	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic			%	100		80-120	Pass	
Cadmium			%	103		80-120	Pass	
Chromium			%	111		80-120	Pass	
Copper			%	105		80-120	Pass	
Lead			%	105		80-120	Pass	
Mercury			%	94		75-125	Pass	
Nickel			%	103		80-120	Pass	
Zinc			%	102		80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	S18-Oc20344	CP	%	112		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	S18-Oc20344	CP	%	97		70-130	Pass	
Toluene	S18-Oc20344	CP	%	107		70-130	Pass	
Ethylbenzene	S18-Oc20344	CP	%	104		70-130	Pass	
m&p-Xylenes	S18-Oc20344	CP	%	98		70-130	Pass	
o-Xylene	S18-Oc20344	CP	%	115		70-130	Pass	
Xylenes - Total	S18-Oc20344	CP	%	104		70-130	Pass	
Spike - % Recovery								

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-Oc20344	CP	%	95			70-130	Pass	
TRH C6-C10	S18-Oc20344	CP	%	106			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-Oc20344	CP	%	96			75-125	Pass	
Cadmium	S18-Oc20344	CP	%	97			75-125	Pass	
Chromium	S18-Oc20344	CP	%	102			75-125	Pass	
Copper	S18-Oc20344	CP	%	102			75-125	Pass	
Lead	S18-Oc20344	CP	%	110			75-125	Pass	
Mercury	S18-Oc20344	CP	%	88			70-130	Pass	
Nickel	S18-Oc20344	CP	%	96			75-125	Pass	
Zinc	S18-Oc20344	CP	%	96			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S18-Oc20348	CP	%	85			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S18-Oc20348	CP	%	83			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-Oc20348	CP	%	110			70-130	Pass	
Acenaphthylene	S18-Oc20348	CP	%	115			70-130	Pass	
Anthracene	S18-Oc20348	CP	%	96			70-130	Pass	
Benz(a)anthracene	S18-Oc20348	CP	%	97			70-130	Pass	
Benzo(a)pyrene	S18-Oc20348	CP	%	111			70-130	Pass	
Benzo(b&j)fluoranthene	S18-Oc20348	CP	%	115			70-130	Pass	
Benzo(g,h,i)perylene	S18-Oc20348	CP	%	91			70-130	Pass	
Benzo(k)fluoranthene	S18-Oc20348	CP	%	108			70-130	Pass	
Chrysene	S18-Oc20348	CP	%	116			70-130	Pass	
Dibenz(a,h)anthracene	S18-Oc20348	CP	%	81			70-130	Pass	
Fluoranthene	S18-Oc20348	CP	%	117			70-130	Pass	
Fluorene	S18-Oc20348	CP	%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S18-Oc20348	CP	%	95			70-130	Pass	
Naphthalene	S18-Oc20348	CP	%	91			70-130	Pass	
Phenanthrene	S18-Oc20348	CP	%	114			70-130	Pass	
Pyrene	S18-Oc20348	CP	%	116			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M18-Oc20705	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-Oc20705	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	M18-Oc20705	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	M18-Oc20705	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	M18-Oc20705	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	M18-Oc20705	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	M18-Oc20705	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M18-Oc20705	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	M18-Oc20705	NCP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-Oc20344	CP	mg/kg	3.3	3.4	3.0	30%	Pass
Cadmium	S18-Oc20344	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-Oc20344	CP	mg/kg	7.9	8.2	4.0	30%	Pass
Copper	S18-Oc20344	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	S18-Oc20344	CP	mg/kg	22	22	2.0	30%	Pass
Mercury	S18-Oc20344	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-Oc20344	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S18-Oc20344	CP	mg/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S18-Oc20347	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S18-Oc20347	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S18-Oc20347	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S18-Oc20347	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S18-Oc20347	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S18-Oc20347	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-Oc20347	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-Oc20349	CP	%	23	19	17	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis

El Australia
Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009



NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: **Nathan Spanos**

Report **625044-S**
 Project name **RESERVE ROAD ST LEONARDS**
 Project ID **E23969**
 Received Date **Oct 30, 2018**

Client Sample ID			V7_A/B-4/5	V7_B/C-3/4	V7_B/C-2/3	V7_D/E-2/3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			M18-Oc36504	M18-Oc36505	M18-Oc36506	M18-Oc36507
Date Sampled			Oct 17, 2018	Oct 17, 2018	Oct 17, 2018	Oct 17, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	114	118	101	104
Tetrachloro-m-xylene (surr.)	1	%	118	113	99	122
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			V7_A/B-4/5	V7_B/C-3/4	V7_B/C-2/3	V7_D/E-2/3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			M18-Oc36504	M18-Oc36505	M18-Oc36506	M18-Oc36507
Date Sampled			Oct 17, 2018	Oct 17, 2018	Oct 17, 2018	Oct 17, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	100	105	85	104
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	114	118	101	104
Tetrachloro-m-xylene (surr.)	1	%	118	113	99	122
% Moisture	1	%	17	19	18	17

Client Sample ID			V7_D/E-3/4	V7_D/E-4/5	V7_D/E-5/6
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			M18-Oc36508	M18-Oc36509	M18-Oc36510
Date Sampled			Oct 17, 2018	Oct 17, 2018	Oct 17, 2018
Test/Reference	LOR	Unit			
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	92	95	100
Tetrachloro-m-xylene (surr.)	1	%	90	121	128
Organophosphorus Pesticides					
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2

Client Sample ID			V7_D/E-3/4	V7_D/E-4/5	V7_D/E-5/6
Sample Matrix			Soil	Soil	Soil
Eurofins mgt Sample No.			M18-Oc36508	M18-Oc36509	M18-Oc36510
Date Sampled			Oct 17, 2018	Oct 17, 2018	Oct 17, 2018
Test/Reference	LOR	Unit			
Organophosphorus Pesticides					
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	88	79	104
Polychlorinated Biphenyls					
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Dibutylchlorodate (surr.)	1	%	92	95	100
Tetrachloro-m-xylene (surr.)	1	%	90	121	128
% Moisture	1	%	16	21	15

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins mgt Suite B15			
Organochlorine Pesticides	Melbourne	Oct 30, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Oct 30, 2018	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Melbourne	Oct 30, 2018	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Melbourne	Oct 30, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: EI Australia
Address: Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Project Name: RESERVE ROAD ST LEONARDS
Project ID: E23969

Order No.:
Report #: 625044
Phone: 02 9516 0722
Fax:

Received: Oct 30, 2018 11:09 AM
Due: Oct 31, 2018
Priority: 1 Day
Contact Name: Nathan Spanos

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail

Sample Detail						Moisture Set	
Eurofins mgt Suite B15						X	X
Melbourne Laboratory - NATA Site # 1254 & 14271							
Sydney Laboratory - NATA Site # 18217							
Brisbane Laboratory - NATA Site # 20794							
Perth Laboratory - NATA Site # 23736							
External Laboratory							
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID		
1	V7 A/B-4/5	Oct 17, 2018		Soil	M18-Oc36504	X	X
2	V7 B/C-3/4	Oct 17, 2018		Soil	M18-Oc36505	X	X
3	V7 B/C-2/3	Oct 17, 2018		Soil	M18-Oc36506	X	X
4	V7 D/E-2/3	Oct 17, 2018		Soil	M18-Oc36507	X	X
5	V7 D/E-3/4	Oct 17, 2018		Soil	M18-Oc36508	X	X
6	V7 D/E-4/5	Oct 17, 2018		Soil	M18-Oc36509	X	X
7	V7 D/E-5/6	Oct 17, 2018		Soil	M18-Oc36510	X	X
Test Counts						7	7

Internal Quality Control Review and Glossary

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. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

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 SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably 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.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4,4'-DDD	%	122			70-130	Pass	
4,4'-DDE	%	118			70-130	Pass	
4,4'-DDT	%	76			70-130	Pass	
a-BHC	%	108			70-130	Pass	
Aldrin	%	117			70-130	Pass	
b-BHC	%	102			70-130	Pass	
d-BHC	%	92			70-130	Pass	
Dieldrin	%	121			70-130	Pass	
Endosulfan I	%	111			70-130	Pass	
Endosulfan II	%	110			70-130	Pass	
Endosulfan sulphate	%	108			70-130	Pass	
Endrin	%	119			70-130	Pass	
Endrin aldehyde	%	124			70-130	Pass	
Endrin ketone	%	127			70-130	Pass	
g-BHC (Lindane)	%	107			70-130	Pass	
Heptachlor	%	102			70-130	Pass	
Heptachlor epoxide	%	113			70-130	Pass	
Hexachlorobenzene	%	104			70-130	Pass	
Methoxychlor	%	102			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	85			70-130	Pass	
Dimethoate	%	79			70-130	Pass	
Ethion	%	102			70-130	Pass	
Fenitrothion	%	80			70-130	Pass	
Methyl parathion	%	77			70-130	Pass	
Mevinphos	%	88			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	M18-Oc33848	NCP	%	118			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4,4'-DDD	M18-Oc36505	CP	%	119			70-130	Pass	
4,4'-DDE	M18-Oc36505	CP	%	112			70-130	Pass	
4,4'-DDT	M18-Oc36505	CP	%	94			70-130	Pass	
a-BHC	M18-Oc36505	CP	%	117			70-130	Pass	
Aldrin	M18-Oc36505	CP	%	127			70-130	Pass	
b-BHC	M18-Oc36505	CP	%	106			70-130	Pass	
d-BHC	M18-Oc36505	CP	%	103			70-130	Pass	
Dieldrin	M18-Oc36505	CP	%	110			70-130	Pass	
Endosulfan I	M18-Oc36505	CP	%	125			70-130	Pass	
Endosulfan II	M18-Oc36505	CP	%	120			70-130	Pass	
Endosulfan sulphate	M18-Oc36505	CP	%	118			70-130	Pass	
Endrin	M18-Oc36505	CP	%	111			70-130	Pass	
Endrin aldehyde	M18-Oc36505	CP	%	115			70-130	Pass	
Endrin ketone	M18-Oc36505	CP	%	117			70-130	Pass	
g-BHC (Lindane)	M18-Oc36505	CP	%	117			70-130	Pass	
Heptachlor	M18-Oc36505	CP	%	119			70-130	Pass	
Heptachlor epoxide	M18-Oc36505	CP	%	124			70-130	Pass	
Hexachlorobenzene	M18-Oc36505	CP	%	116			70-130	Pass	
Methoxychlor	M18-Oc36505	CP	%	123			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	M18-Oc36505	CP	%	113			70-130	Pass	
Dimethoate	M18-Oc36505	CP	%	71			70-130	Pass	
Ethion	M18-Oc36505	CP	%	117			70-130	Pass	
Fenitrothion	M18-Oc36505	CP	%	85			70-130	Pass	
Methyl parathion	M18-Oc36505	CP	%	79			70-130	Pass	
Mevinphos	M18-Oc36505	CP	%	108			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Methoxychlor	M18-Oc36504	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M18-Oc36504	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	M18-Oc36504	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	M18-Oc36504	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	M18-Oc36504	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	M18-Oc36504	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M18-Oc36504	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	M18-Oc36510	CP	%	15	16	7.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Nibha Vaidya	Analytical Services Manager
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025-Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards

El Australia
Suite 6.01, 55 Miller Street
Pymont
NSW 2009

Attention: Nathan Spanos
Report 622964-AID
Project Name RESERVE ROAD ST LEONARDS
Project ID E23969
Received Date Oct 17, 2018
Date Reported Oct 24, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w). The examination of large sample sizes (500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction. The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA (friable asbestos) and AF (asbestos fines) then applies where they are able to be quantified by gravimetric procedures. This quantitative screening is not generally applicable to FF (free fibres) and results of Trace Analysis are referred.

NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk). This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.

Project Name RESERVE ROAD ST LEONARDS
Project ID E23969
Date Sampled Oct 17, 2018
Report 622964-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
V7_A/B-4/5	18-Oc20344	Oct 17, 2018	Approximate Sample 132g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V7_B/C-3/4	18-Oc20345	Oct 17, 2018	Approximate Sample 89g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V7_B/C-2/3	18-Oc20346	Oct 17, 2018	Approximate Sample 157g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V7_D/E-2/3	18-Oc20347	Oct 17, 2018	Approximate Sample 120g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V7_D/E-3/4	18-Oc20348	Oct 17, 2018	Approximate Sample 140g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V7_D/E-4/5	18-Oc20349	Oct 17, 2018	Approximate Sample 123g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
V7_D/E-5/6	18-Oc20350	Oct 17, 2018	Approximate Sample 138g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.