

WASTE CLASSIFICATION REPORT	
Material identification and source	Stockpile STP06 materials were generated from in-situ soils excavated on site, as marked in Attachment A -Figure 2. Stockpile STP06 is currently located 5m north of the classroom building at the site. The stockpiled materials have an estimated volume of 15m³. Materials encountered within the stockpile comprised of brown medium coarse-grained sand, gravels and organic mulch with inclusions of other anthropogenic material. Photos of the materials are referenced in Attachment B.
Samples collected	A total of three soil samples and two suspected asbestos containing material (ACM) samples were collected from stockpile STP06 and analysed at a NATA accredited laboratory. Sample identifications for stockpile STP06, are as follows: — S03_0.1 — S04_0.1 — S05 — ACM01 — ACM02 The three samples were collected from stockpile STP06 provided the minimum sampling requirement for stockpiles less than 75m³ presented in the National Environment Protection (Assessment of Site Contamination) Measure 1999 amended 2013 (NEPM 2013). Given that the site has been used as a school for over 100 years, samples were analysed for a broad suite of analytes commonly associated with general urban land use. Suspected asbestos containing material (ACM) samples were collected from stockpile STP06 to analyse for asbestos presence/absence.
Sampling method	The sampling methodology used during the works is as follows: — Samples were collected using a trowel to a minimum depth of 0.2m into the stockpile. — Soil samples were collected directly from the trowel using disposable nitrile gloves. The trowel was decontaminated prior to undertaking sampling at each sample location. All samples collected were placed in dedicated laboratory supplied sample containers. — Samples were stored in an insulated cooler box with ice bricks immediately after sampling. Samples were kept chilled prior to and during delivery to the selected National Association of Testing Authorities (NATA) accredited laboratory. — Suspected asbestos containing material (ACM) samples were collected from the stockpile material and double bagged into zip-lock plastic bags for transportation to the laboratory for analysis. — All samples collected were delivery to the selected National Association of Testing Authorities (NATA) accredited laboratory with appropriate 'chain of custody' documentation.

WASTE CLASSIFICATION REPORT		
Laboratory analytes	— Heavy metals — Total recoverable hydrocarbons (TRH) — Benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN)	— Polycyclic aromatic hydrocarbons (PAHs) — Organochlorine pesticides (OCPs) — Organophosphorus Pesticides (OPPs) — Polychlorinated biphenyls (PCBs) — Asbestos (P/A)
Assessment criteria	The field observations and analytical results are compared to the applicable criteria presented in the NSW Environment Protection Authority (2014) <i>Waste Classification Guidelines</i> as amended.	
Visual/olfactory evidence of contamination	Chrysotile asbestos was present in all suspected ACM samples collected from stockpile STP06. No olfactory evidence of contamination was noted during the collection of samples from stockpile STP06.	
Analytical results and comparison	All analytical results were below general solid waste CT1 criteria. Following toxicity characteristic leaching procedure (TCLP) testing on the soil samples collected, concentrations of benzo(a)pyrene and heavy metals in all the soil samples were below TCLP1 criteria for general solid waste. Analytical results summary tables and laboratory certificates are presented in Attachment C and Attachment D respectively.	
Waste classification	Based on the analytical results for stockpile STP06, the material is classified as “SPECIAL WASTE (ASBESTOS), IN A MATRIX CHEMICALLY CONSISTANT WITH GENERAL SOLID WASTE – NON-PUTRESCIBLE” .	
Disposal Requirements: The material classified under this waste classification report is suitable to be disposed to a facility appropriately licensed to accept Special Waste (Asbestos) in a matrix chemically consistent with General Solid Waste – Non-putrescible .		

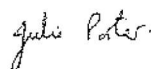
Note that this waste classification is considered correct as at the date of sampling. WSP is not responsible for changes to material composition and classification due to activities occurring after this date. This waste classification certificate only relates to the materials described in the ‘Material identification and source’ section and as delineated in Figure 2 and 3, Attachment A. Any other materials disposed off-site should be accompanied by their own discrete waste classification report.

The findings of this waste classification are subject to the limitations attached.

Yours sincerely



Cleo Wu
Graduate Environmental Engineer



Julie Porter
Principal Environmental Engineer

LIMITATIONS

Scope of services

This environmental site assessment report (the report) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and WSP (scope of services). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

Reliance on data

In preparing the report, WSP has relied upon data, surveys, analyses, designs, plans and other information provided by the client and other individuals and organisations, most of which are referred to in the report (the data). Except as otherwise stated in the report, WSP has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (conclusions) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. WSP will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP.

Environmental conclusions

In accordance with the scope of services, WSP has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

On all sites, varying degrees of non-uniformity of the vertical and horizontal soil or groundwater conditions are encountered. Hence no monitoring, common testing or sampling technique can eliminate the possibility that monitoring or testing results/samples are not totally representative of soil and/or groundwater conditions encountered. The conclusions are based upon the data and the environmental field monitoring and/or testing and are therefore merely indicative of the environmental condition of the site at the time of preparing the report, including the presence or otherwise of contaminants or emissions.

Also, it should be recognised that site conditions, including the extent and concentration of contaminants, can change with time.

Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

Report for benefit of client

The report has been prepared for the benefit of the client and no other party. WSP assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of WSP or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

Other limitations

WSP will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

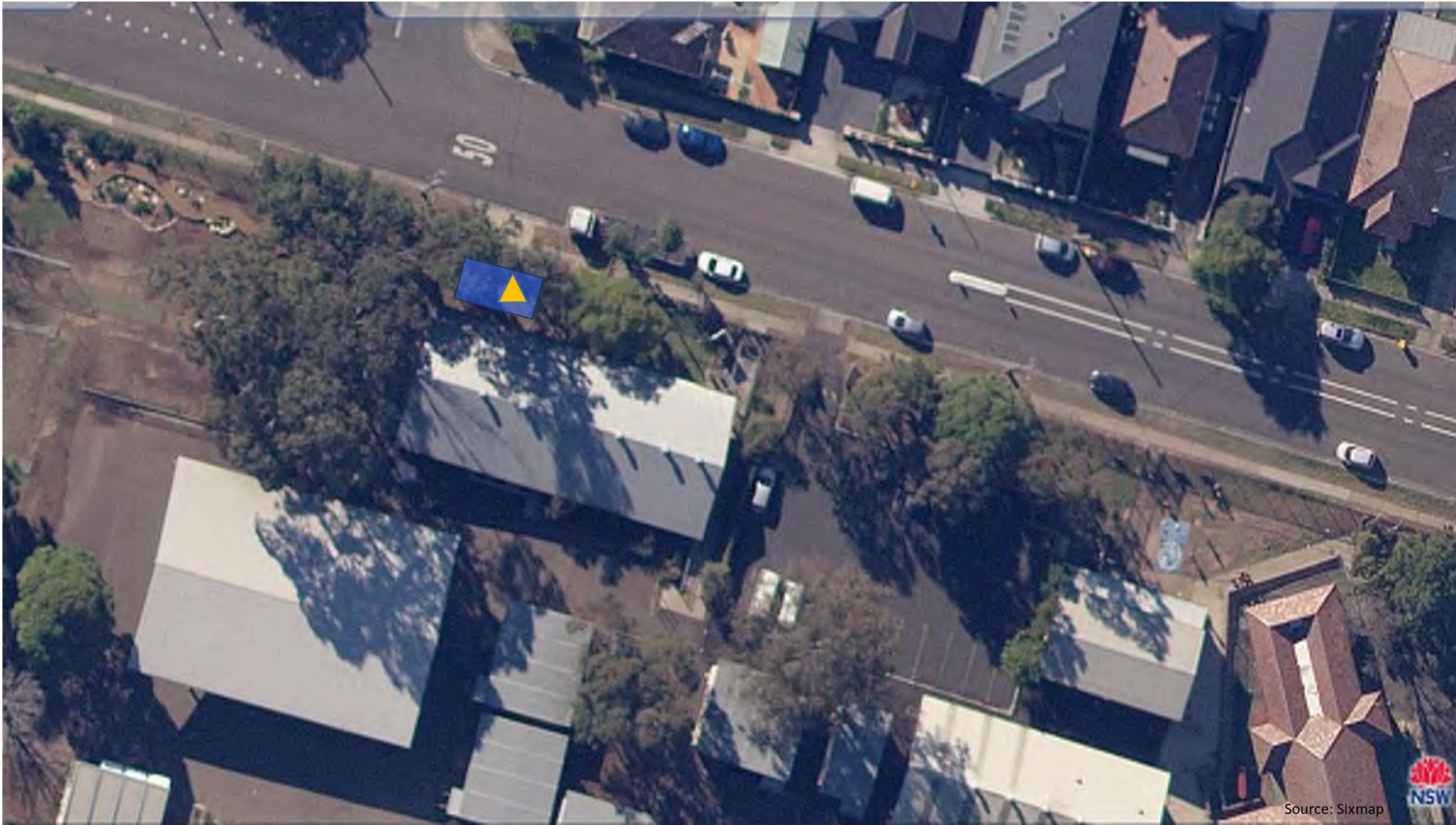
The scope of services did not include any assessment of the title to or ownership of the properties, buildings and structures referred to in the report nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

ATTACHMENT A

FIGURES



Legend			Client: Grindley Constructions Pty Ltd	
	Site boundary		Project: Stockpile (STP06) waste classification	
	Approximate investigation area		Title Site location plan	
			Project no.: PS119057	Figure 1



Legend



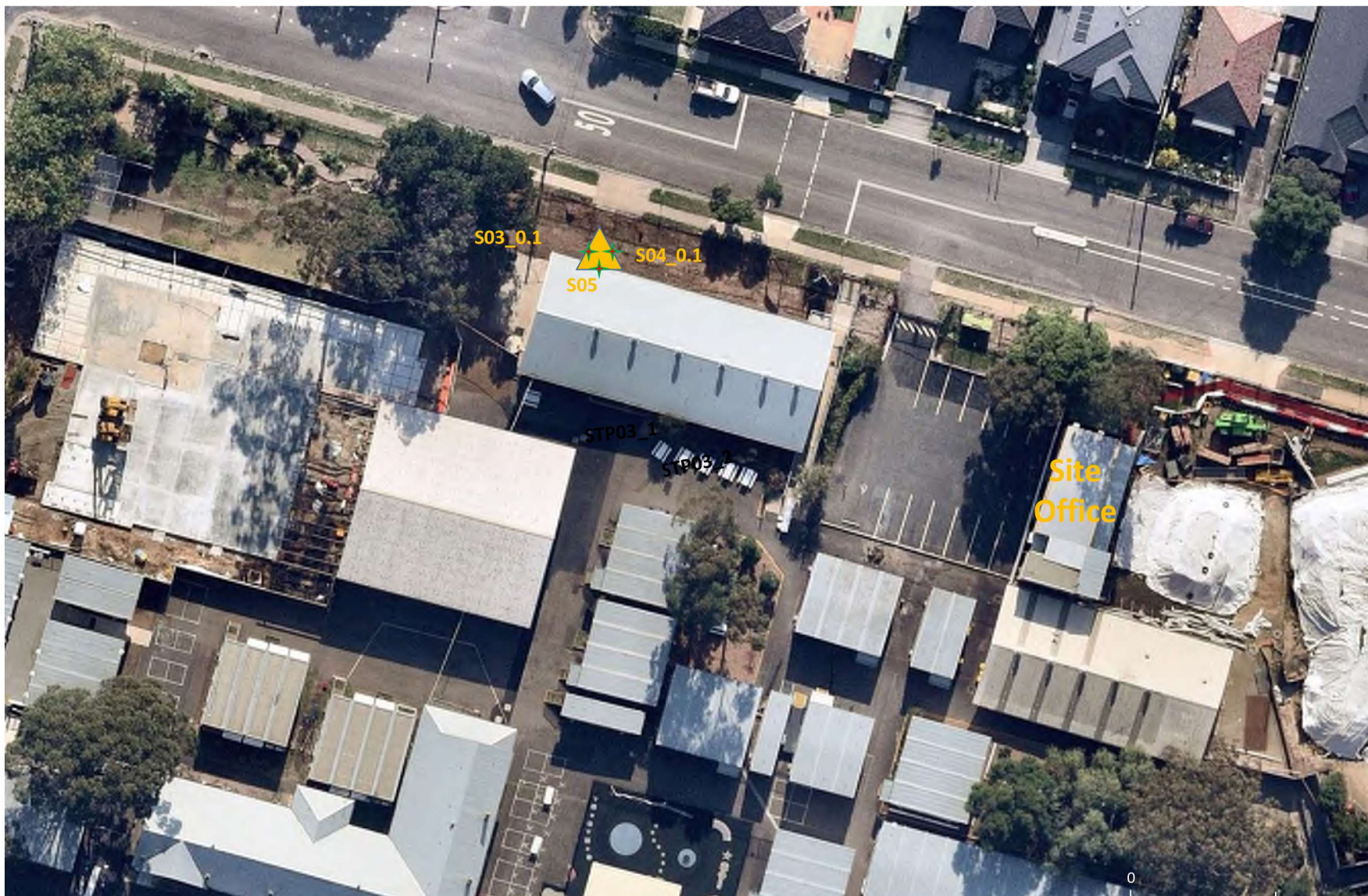
Approximate Insitu extent of STP06



Approximate STP06 location (Special waste- Asbestos)



Client:	Grindley Constructions Pty Ltd	
Project:	Stockpile (STP06) waste classification	
Title	Investigation area	
Project no.:	PS119057	Figure 2



Source: Nearmap

Legend



Approximate stockpile location (STP06)



Approximate sampling location (STP06)



Client:	Grindley Constructions Pty Ltd	
Project:	Stockpile (STP06) waste classification	
Title	Stockpile location	
Project no.:	PS119057	Figure 3

ATTACHMENT B
MATERIAL PHOTOGRAPHS



Photo 1. Example of stockpile covered with geofabric layer (STP06)



Photo 2. Representative soil matrix of stockpile.



Photo 3. Representative ACM fragments were collected from stockpile.



Photo 4. Example of sandy gravelly material observed in S03_0.1.

ATTACHMENT C

SUMMARY RESULTS

		TPH		BTEX				PAH			
		C6 - C9	C10 - C16 (Sum)	Benzene	Toluene	Ethylbenzene	Xylene (Sum)	Benzo(a) pyrene	Benzo(a) pyrene TCLP	Naphthalene	Benzo(a)pyrene TEQ calc (Zero)
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/L	mg/kg	mg/kg
EQL		20	110	0.1	0.1	0.1	0.3	0.1	0.1	0.1	0.2
NSW 2014 General Solid Waste CT1 (No Leaching)		650	10,000	10	288	600	1,000	0.8			
NSW 2014 General Solid Waste SCC1 (with leached)		650	10,000	18	518	1,080	1,800	10			
NSW 2014 General Solid Waste TCLP1 (leached)								40			
S03_0.1	6/26/2020	<20	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.2
S04_0.1	6/26/2020	<20	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.2
S05	6/26/2020	<20	<110	<0.1	<0.1	<0.1	<0.3	<0.1	<0.1	<0.1	<0.2

	Metals														
PAHs (Sum)	Arsenic	Arsenic TCLP	Cadmium	Cadmium TCLP	Chromium	Chromium TCLP	Copper	Copper TCLP	Lead	Lead TCLP	Mercury	Mercury TCLP	Nickel	Nickel TCLP	Zinc
mg/kg	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg	mg/L	mg/kg
0.8	1	0.02	0.3	0.001	0.5	0.005	0.5	0.005	1	0.02	0.05	0.0001	0.5	0.005	2
200	100		20		100 ^{#1}				100		4		40		
200	500		100		1,900 ^{#1}				1,500		50		1,050		
		5		1		5				5		0.2		2	
<0.8	7	<0.02	<0.3	<0.001	12	<0.005	17	<0.005	43	<0.02	<0.05	<0.0001	6.6	<0.005	85
<0.8	7	<0.02	<0.3	<0.001	12	<0.005	13	<0.005	30	<0.02	<0.05	<0.0001	5.1	<0.005	52
<0.8	10	<0.02	<0.3	<0.001	13	<0.005	14	<0.005	43	<0.02	<0.05	<0.0001	5.1	<0.005	130



	OCP					OPP		PCB	Asbestos Identification in Soi
Zinc TCLP	DDT	Endosulfan I	Endosulfan II	Endosulfan sulphate	Scheduled Chemicals	Chlorpyrifos	Moderately harmful Pesticides	PCBs (Sum of total)	Asbestos fibres
mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	-
0.01	0.1	0.1	0.1	0.2	0.1	0.2	0.5	1	0
		60#2	60#2	60#2	<50	4	250	50	
		108#2	108#2	108#2	<50	7.5		50	
0.13	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<1	0
0.12	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<1	0
0.35	<0.1	<0.1	<0.1	<0.2	<0.1	<0.2	<0.5	<1	0

ATTACHMENT D
LABORATORY CERTIFICATES

CLIENT DETAILS

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Project **PS119057 - WWPS ACM**
 Order Number **PS119057**
 Samples 8

LABORATORY DETAILS

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SGS Reference **SE208003 R0**
 Date Received 26/6/2020
 Date Reported 29/6/2020

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

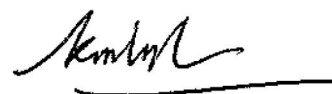
SIGNATORIES



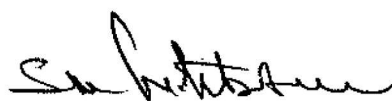
Bennet LO
 Senior Organic Chemist/Metals Chemist



Dong LIANG
 Metals/Inorganics Team Leader



Ly Kim HA
 Organic Section Head



Yusuf KUTHPUDIN
 Asbestos Analyst



ANALYTICAL RESULTS

SE208003 R0

VOC's in Soil [AN433] Tested: 26/6/2020

PARAMETER	UOM	LOR	S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			26/6/2020 SE208003.001	26/6/2020 SE208003.002	26/6/2020 SE208003.003	26/6/2020 SE208003.004	26/6/2020 SE208003.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

PARAMETER	UOM	LOR	TB260620	TS260620
			SOIL	SOIL
			-	-
			26/6/2020 SE208003.006	26/6/2020 SE208003.007
Benzene	mg/kg	0.1	<0.1	[96%]
Toluene	mg/kg	0.1	<0.1	[99%]
Ethylbenzene	mg/kg	0.1	<0.1	[101%]
m/p-xylene	mg/kg	0.2	<0.2	[101%]
o-xylene	mg/kg	0.1	<0.1	[100%]
Total Xylenes	mg/kg	0.3	<0.3	-
Total BTEX	mg/kg	0.6	<0.6	-
Naphthalene	mg/kg	0.1	<0.1	-



ANALYTICAL RESULTS

SE208003 R0

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 26/6/2020

			S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL - 26/6/2020 SE208003.001	SOIL - 26/6/2020 SE208003.002	SOIL - 26/6/2020 SE208003.003	SOIL - 26/6/2020 SE208003.004	SOIL - 26/6/2020 SE208003.005
PARAMETER	UOM	LOR					
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

			TB260620
			SOIL - 26/6/2020 SE208003.006
PARAMETER	UOM	LOR	
TRH C6-C9	mg/kg	20	<20
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10	mg/kg	25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25



ANALYTICAL RESULTS

SE208003 R0

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 26/6/2020

PARAMETER	UOM	LOR	S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			26/6/2020 SE208003.001	26/6/2020 SE208003.002	26/6/2020 SE208003.003	26/6/2020 SE208003.004	26/6/2020 SE208003.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 26/6/2020

PARAMETER	UOM	LOR	S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			26/6/2020 SE208003.001	26/6/2020 SE208003.002	26/6/2020 SE208003.003	26/6/2020 SE208003.004	26/6/2020 SE208003.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	0.1	0.2	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 26/6/2020

PARAMETER	UOM	LOR	S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			26/6/2020 SE208003.001	26/6/2020 SE208003.002	26/6/2020 SE208003.003	26/6/2020 SE208003.004	26/6/2020 SE208003.005
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1	<1	<1	<1	<1



ANALYTICAL RESULTS

SE208003 R0

OP Pesticides in Soil [AN420] Tested: 26/6/2020

PARAMETER	UOM	LOR	S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			26/6/2020 SE208003.001	26/6/2020 SE208003.002	26/6/2020 SE208003.003	26/6/2020 SE208003.004	26/6/2020 SE208003.005
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7	<1.7	<1.7	<1.7	<1.7



ANALYTICAL RESULTS

SE208003 R0

PCBs in Soil [AN420] Tested: 26/6/2020

PARAMETER	UOM	LOR	S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			26/6/2020 SE208003.001	26/6/2020 SE208003.002	26/6/2020 SE208003.003	26/6/2020 SE208003.004	26/6/2020 SE208003.005
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1



ANALYTICAL RESULTS

SE208003 R0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 29/6/2020

PARAMETER	UOM	LOR	S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			26/6/2020 SE208003.001	26/6/2020 SE208003.002	26/6/2020 SE208003.003	26/6/2020 SE208003.004	26/6/2020 SE208003.005
Arsenic, As	mg/kg	1	7	7	7	7	9
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	11	14	12	12	13
Copper, Cu	mg/kg	0.5	9.1	4.9	17	13	8.4
Lead, Pb	mg/kg	1	14	16	43	30	17
Nickel, Ni	mg/kg	0.5	7.4	2.6	6.6	5.1	6.5
Zinc, Zn	mg/kg	2	38	13	85	52	32



ANALYTICAL RESULTS

SE208003 R0

Mercury in Soil [AN312] Tested: 26/6/2020

			S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			26/6/2020	26/6/2020	26/6/2020	26/6/2020	26/6/2020
PARAMETER	UOM	LOR	SE208003.001	SE208003.002	SE208003.003	SE208003.004	SE208003.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05



ANALYTICAL RESULTS

SE208003 R0

Moisture Content [AN002] Tested: 26/6/2020

			S01_0.1	S02_0.1	S03_0.1	S04_0.1	QA01
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			26/6/2020	26/6/2020	26/6/2020	26/6/2020	26/6/2020
PARAMETER	UOM	LOR	SE208003.001	SE208003.002	SE208003.003	SE208003.004	SE208003.005
% Moisture	%w/w	1	15.7	10.0	17.4	14.0	14.7

			TB260620
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003.006
% Moisture	%w/w	1	<1.0



ANALYTICAL RESULTS

SE208003 R0

Fibre Identification in soil [AN602] Tested: 26/6/2020

			S01_0.1	S02_0.1	S03_0.1	S04_0.1
			SOIL	SOIL	SOIL	SOIL
			-	-	-	-
			26/6/2020	26/6/2020	26/6/2020	26/6/2020
			SE208003.001	SE208003.002	SE208003.003	SE208003.004
PARAMETER	UOM	LOR				
Asbestos Detected	No unit	-	No	No	No	No



ANALYTICAL RESULTS

SE208003 R0

VOCs in Water [AN433] Tested: 26/6/2020

			RN260620
			WATER
			-
			26/6/2020
			SE208003.008
PARAMETER	UOM	LOR	
Benzene	µg/L	0.5	<0.5
Toluene	µg/L	0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
o-xylene	µg/L	0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5
Total BTEX	µg/L	3	<3
Naphthalene	µg/L	0.5	<0.5



ANALYTICAL RESULTS

SE208003 R0

Volatile Petroleum Hydrocarbons in Water [AN433] Tested: 26/6/2020

			RN260620
			WATER
			-
			26/6/2020
			SE208003.008
PARAMETER	UOM	LOR	
TRH C6-C9	µg/L	40	<40
Benzene (F0)	µg/L	0.5	<0.5
TRH C6-C10	µg/L	50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50



ANALYTICAL RESULTS

SE208003 R0

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 29/6/2020

			RN260620
			WATER
			-
			26/6/2020
			SE208003.008
PARAMETER	UOM	LOR	
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16	µg/L	60	<60
TRH >C10-C16 - Naphthalene (F2)	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C40	µg/L	320	<320



ANALYTICAL RESULTS

SE208003 R0

PAH (Polynuclear Aromatic Hydrocarbons) in Water [AN420] Tested: 29/6/2020

			RN260620
			WATER
			-
			26/6/2020
			SE208003.008
PARAMETER	UOM	LOR	
Naphthalene	µg/L	0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1
Fluorene	µg/L	0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1
Anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1
Pyrene	µg/L	0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(ah)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (18)	µg/L	1	<1

OC Pesticides in Water [AN420] Tested: 29/6/2020

			RN260620
			WATER
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003.008
Alpha BHC	µg/L	0.1	<0.1
Hexachlorobenzene (HCB)	µg/L	0.1	<0.1
Beta BHC	µg/L	0.1	<0.1
Lindane (gamma BHC)	µg/L	0.1	<0.1
Delta BHC	µg/L	0.1	<0.1
Heptachlor	µg/L	0.1	<0.1
Aldrin	µg/L	0.1	<0.1
Heptachlor epoxide	µg/L	0.1	<0.1
Gamma Chlordane	µg/L	0.1	<0.1
Alpha Chlordane	µg/L	0.1	<0.1
Alpha Endosulfan	µg/L	0.1	<0.1
o,p'-DDE	µg/L	0.1	<0.1
p,p'-DDE	µg/L	0.1	<0.1
Dieldrin	µg/L	0.1	<0.1
Endrin	µg/L	0.1	<0.1
Beta Endosulfan	µg/L	0.1	<0.1
o,p'-DDD	µg/L	0.1	<0.1
p,p'-DDD	µg/L	0.1	<0.1
Endosulfan sulphate	µg/L	0.1	<0.1
o,p'-DDT	µg/L	0.1	<0.1
p,p'-DDT	µg/L	0.1	<0.1
Endrin ketone	µg/L	0.1	<0.1
Methoxychlor	µg/L	0.1	<0.1
trans-Nonachlor	µg/L	0.1	<0.1
Endrin aldehyde	µg/L	0.1	<0.1
Isodrin	µg/L	0.1	<0.1
Mirex	µg/L	0.1	<0.1



ANALYTICAL RESULTS

SE208003 R0

OP Pesticides in Water [AN420] Tested: 29/6/2020

			RN260620
			WATER
			-
			26/6/2020
			SE208003.008
PARAMETER	UOM	LOR	
Dichlorvos	µg/L	0.5	<0.5
Dimethoate	µg/L	0.5	<0.5
Diazinon (Dimpylate)	µg/L	0.5	<0.5
Fenitrothion	µg/L	0.2	<0.2
Malathion	µg/L	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2
Parathion-ethyl (Parathion)	µg/L	0.2	<0.2
Bromophos Ethyl	µg/L	0.2	<0.2
Methidathion	µg/L	0.5	<0.5
Ethion	µg/L	0.2	<0.2
Azinphos-methyl	µg/L	0.2	<0.2



ANALYTICAL RESULTS

SE208003 R0

PCBs in Water [AN420] Tested: 29/6/2020

			RN260620
			WATER
			-
			26/6/2020
			SE208003.008
PARAMETER	UOM	LOR	
Arochlor 1016	µg/L	1	<1
Arochlor 1221	µg/L	1	<1
Arochlor 1232	µg/L	1	<1
Arochlor 1242	µg/L	1	<1
Arochlor 1248	µg/L	1	<1
Arochlor 1254	µg/L	1	<1
Arochlor 1260	µg/L	1	<1
Arochlor 1262	µg/L	1	<1
Arochlor 1268	µg/L	1	<1
Total Arochlors*	µg/L	5	<5



ANALYTICAL RESULTS

SE208003 R0

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 26/6/2020

			RN260620
			WATER
			-
			26/6/2020
			SE208003.008
PARAMETER	UOM	LOR	
Arsenic, As	µg/L	1	<1
Cadmium, Cd	µg/L	0.1	<0.1
Chromium, Cr	µg/L	1	<1
Copper, Cu	µg/L	1	<1
Lead, Pb	µg/L	1	<1
Nickel, Ni	µg/L	1	<1
Zinc, Zn	µg/L	5	<5



ANALYTICAL RESULTS

SE208003 R0

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 29/6/2020

			RN260620
			WATER
			-
			26/6/2020
			SE208003.008
PARAMETER	UOM	LOR	
Mercury	mg/L	0.0001	<0.0001

METHOD

METHODOLOGY SUMMARY

AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602

The sample can be reported "no asbestos found at the reporting limit of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if-

- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
- (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
- (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- a. 1 Bq is equivalent to 27 pCi
- b. 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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Project **PS119057 - WWPS ACM**
 Order Number **PS119057**
 Samples 4

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SGS Reference **SE208003 R0**
 Date Received 26 Jun 2020
 Date Reported 29 Jun 2020

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all soil samples using trace analysis technique.

Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

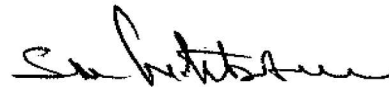
SIGNATORIES



Bennet LO
 Senior Organic Chemist/Metals Chemis



Ly Kim HA
 Organic Section Head



Yusuf KUTHPUDIN
 Asbestos Analyst



ANALYTICAL REPORT

SE208003 R0

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE208003.001	S01_0.1	Soil	164g Clay, Rocks	26 Jun 2020	No Asbestos Found	
SE208003.002	S02_0.1	Soil	139g Clay, Rocks	26 Jun 2020	No Asbestos Found	
SE208003.003	S03_0.1	Soil	192g Clay, Sand, Soil, Rocks	26 Jun 2020	No Asbestos Found Organic Fibres Detected	
SE208003.004	S04_0.1	Soil	185g Clay, Sand, Soil, Rocks	26 Jun 2020	No Asbestos Found Organic Fibres Detected	

METHOD

METHODOLOGY SUMMARY

AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported "no asbestos found at the reporting limit of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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Project **PS119057 - WWPS ACM**
 Order Number **PS119057**
 Samples 11

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SGS Reference **SE208003A R0**
 Date Received 28/6/2020
 Date Reported 30/6/2020

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all soil samples using trace analysis technique.

Sample #9 :A portion of the sample supplied has been sub-sampled for asbestos according to SGS In-house procedures.

We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Environment, Health and Safety recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin .

SIGNATORIES



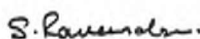
Bennet LO
 Senior Organic Chemist/Metals Chemist



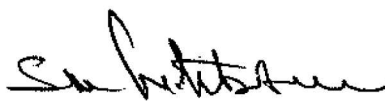
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Ly Kim HA
 Organic Section Head



Ravee SIVASUBRAMANIAM
 Hygiene Team Leader



Yusuf KUTHPUDIN
 Asbestos Analyst



ANALYTICAL RESULTS

SE208003A R0

VOC's in Soil [AN433] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
Benzene	mg/kg	0.1	<0.1
Toluene	mg/kg	0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2
o-xylene	mg/kg	0.1	<0.1
Total Xylenes	mg/kg	0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1



ANALYTICAL RESULTS

SE208003A R0

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
TRH C6-C9	mg/kg	20	<20
Benzene (F0)	mg/kg	0.1	<0.1
TRH C6-C10	mg/kg	25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25



ANALYTICAL RESULTS

SE208003A R0

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
TRH C10-C14	mg/kg	20	<20
TRH C15-C28	mg/kg	45	<45
TRH C29-C36	mg/kg	45	<45
TRH C37-C40	mg/kg	100	<100
TRH >C10-C16	mg/kg	25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120
TRH C10-C36 Total	mg/kg	110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210



ANALYTICAL RESULTS

SE208003A R0

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
Naphthalene	mg/kg	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1
Fluorene	mg/kg	0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1
Anthracene	mg/kg	0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1
Pyrene	mg/kg	0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1
Chrysene	mg/kg	0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0	TEQ (mg/kg)	0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR	TEQ (mg/kg)	0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2	TEQ (mg/kg)	0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8



ANALYTICAL RESULTS

SE208003A R0

OC Pesticides in Soil [AN420] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1
Lindane	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2
Endrin	mg/kg	0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1
Isodrin	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1
Total CLP OC Pesticides	mg/kg	1	<1



ANALYTICAL RESULTS

SE208003A R0

OP Pesticides in Soil [AN420] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
Dichlorvos	mg/kg	0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2
Malathion	mg/kg	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2
Methidathion	mg/kg	0.5	<0.5
Ethion	mg/kg	0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
Total OP Pesticides*	mg/kg	1.7	<1.7



ANALYTICAL RESULTS

SE208003A R0

PCBs in Soil [AN420] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
Arochlor 1016	mg/kg	0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1



ANALYTICAL RESULTS

SE208003A R0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
Arsenic, As	mg/kg	1	10
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.5	13
Copper, Cu	mg/kg	0.5	14
Lead, Pb	mg/kg	1	43
Nickel, Ni	mg/kg	0.5	5.1
Zinc, Zn	mg/kg	2	130



ANALYTICAL RESULTS

SE208003A R0

Mercury in Soil [AN312] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
PARAMETER	UOM	LOR	SE208003A.009
Mercury	mg/kg	0.05	<0.05



ANALYTICAL RESULTS

SE208003A R0

Moisture Content [AN002] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
			SE208003A.009
PARAMETER	UOM	LOR	
% Moisture	%w/w	1	14.0



ANALYTICAL RESULTS

SE208003A R0

Fibre Identification in soil [AN602] Tested: 29/6/2020

			S05
			SOIL
			-
			26/6/2020
			SE208003A.009
PARAMETER	UOM	LOR	
Asbestos Detected	No unit	-	No



ANALYTICAL RESULTS

SE208003A R0

Fibre ID in bulk materials [AN602] Tested: 30/6/2020

			ACM01	ACM02
			MATERIAL	MATERIAL
			-	-
			26/6/2020	26/6/2020
			SE208003A.010	SE208003A.011
PARAMETER	UOM	LOR		
Asbestos Detected	No unit	-	Yes	Yes

METHOD

METHODOLOGY SUMMARY

- AN002** The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
- AN040/AN320** A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
- AN040** A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8.
- AN312** Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
- AN403** Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
- AN403** Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
- AN403** The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
- AN420** (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
- AN420** SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
- AN433** VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
- AN602** Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
- AN602** Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
- AN602** AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
- AN602** The sample can be reported "no asbestos found at the reporting limit of 0.1 g/kg" (<0.01%/w/w) where AN602 section 4.5 of this method has been followed, and if-
- no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
 - the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
 - these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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 Order Number **PS119057**
 Samples 3

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 SGS Reference **SE208003A R0**
 Date Received 28 Jun 2020
 Date Reported 30 Jun 2020

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

No respirable fibres detected in all soil samples using trace analysis technique.

Sample #9 :A portion of the sample supplied has been sub-sampled for asbestos according to SGS In-house procedures.

We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Environment, Health and Safety recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin .

SIGNATORIES



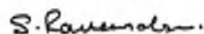
Bennet LO
 Senior Organic Chemist/Metals Chemis



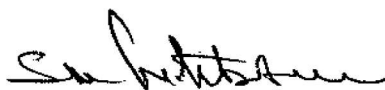
Kamrul AHSAN
 Senior Chemist



Ly Kim HA
 Organic Section Head



Ravee SIVASUBRAMANIAM
 Hygiene Team Leader



Yusuf KUTHPUDIN
 Asbestos Analyst



ANALYTICAL REPORT

SE208003A R0

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE208003A.009	S05	Soil	153g Clay, Sand, Soil, Rocks	26 Jun 2020	No Asbestos Found Organic Fibres Detected	



ANALYTICAL REPORT

SE208003A R0

RESULTS

Fibre ID in bulk materials

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE208003A.010	ACM01	Other	60x30x4mm Cement Sheet Fragment	26 Jun 2020	Chrysotile Asbestos Detected	
SE208003A.011	ACM02	Other	70x70x4mm Cement Sheet Fragment x2	26 Jun 2020	Chrysotile Asbestos Detected	

METHOD

METHODOLOGY SUMMARY

AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported "no asbestos found at the reporting limit of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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E-MAILED

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page 1 of 1

SGS Environmental Services Sydney
 Unit 16, 33 Maddox Street
 Alexandria NSW 2015
 telephone No: (02) 85940400
 facsimile No: (02) 85940499
 mail: au.samplerreceipt@sgs.com

Lab ID Number: (please quote on correspondence)

Company Name: WSP

Address:

Level 27, Ernst & Young Centre
 680 George Street
 Sydney NSW 2000

Contact Name:

Hamish Donovan / Cleo Wu

Quotation No:

SY141023-1-IS

Project Name/No:

PS119057 - WWPS ACM

Purchase Order No:

PS119057

Results Required Date:

24h TAT

Telephone:

D: 0400 359 547

Email Results to:

Hamish.Donovan@wsp.com; Cleo.Wu@wsp.com

Matrix
(Tick as appropriate)

NO. OF CONTAINERS

ANALYSIS REQUESTED

Additional Report Formats

SGS ID	Client Sample ID	Report ID	Soil Sam	Water Sam	FRAC	NO. OF C	CL17	Asbestos P	ON HOLD	TRH, BTE Metals (As, Cu, Ni, Pb, Zn	TRH, BTE											Notes/Guidelines/LOR/ Special instructions
1	S01_0.1		X			J+B				X												
2	S02_0.1		X			J+B				X												
3	S03_0.1		X			J+B	X	X														
4	S04_0.1		X			J+B	X	X														
5	QA01		X			J				X												
	QA01A		X			J				X												
6	TB260620			X		1					X											
7	TS260620			X		1					X											
8	RN260620			X		1				X												
9	S05		X			B	X	X														Please take soil from bag to analysis CL17 + Asbestos P/A
10	ACM01				X			X														
11	ACM02				X			X														

SGS EHS Alexandria Laboratory



SE208003A COC

Received: 28 – Jun – 2020

SGS EHS Alexandria Laboratory



SE208003A COC
 Received: 28-Jun-2020

Please forward to Eurofins

Relinquished By: / WSP: Cleo Wu

Date/Time: 26/06/2020

Received By:

Date/Time:

Relinquished By:

Date/Time:

Received By:

Date/Time:

Samples Intact: Yes / No

Temperature: 2.8 °C

Sample Security Sealed: Yes / No

Hazards: e.g. may contain Asbestos

CLIENT DETAILS

Contact Hamish Donovan
 Client WSP AUSTRALIA PTY LIMITED
 Address Level 27, Ernst & Young Centre
 680 George St
 NSW 2000

Telephone 02 9272 1453
 Facsimile 02 9272 5101
 Email Hamish.Donovan@wsp.com

Project **PS119057 - WWPS ACM-Additional**
 Order Number **PS119057**
 Samples 11

LABORATORY DETAILS

Manager Huong Crawford
 Laboratory SGS Alexandria Environmental
 Address Unit 16, 33 Maddox St
 Alexandria NSW 2015

Telephone +61 2 8594 0400
 Facsimile +61 2 8594 0499
 Email au.environmental.sydney@sgs.com

SGS Reference **SE208003B R0**
 Date Received 30/6/2020
 Date Reported 1/7/2020

COMMENTS

Accredited for compliance with ISO/IEC 17025 - Testing. NATA accredited laboratory 2562(4354).

SIGNATORIES



Bennet LO
 Senior Organic Chemist/Metals Chemist



Dong LIANG
 Metals/Inorganics Team Leader



Ly Kim HA
 Organic Section Head



ANALYTICAL RESULTS

SE208003B R0

TCLP (Toxicity Characteristic Leaching Procedure) for Organics/SVOC [AN006] Tested: 30/6/2020

			S03_0.1	S04_0.1	S05
			SOIL	SOIL	SOIL
			-	-	-
			26/6/2020	26/6/2020	26/6/2020
			SE208003B.003	SE208003B.004	SE208003B.009
PARAMETER	UOM	LOR			
pH 1:20	pH Units	-	7.0	7.1	6.6
pH 1:20 plus HCL	pH Units	-	1.7	1.7	1.7
Extraction Solution Used	No unit	-	1	1	1
Mass of Sample Used*	g	-	25	25	25
Volume of ExtractionSolution Used*	mL	-	500	500	500
pH TCLP after 18 hours	pH Units	-	5.2	5.1	5.0



ANALYTICAL RESULTS

SE208003B R0

PAH (Polynuclear Aromatic Hydrocarbons) in TCLP Extract [AN420] Tested: 1/7/2020

			S03_0.1	S04_0.1	S05
			SOIL	SOIL	SOIL
			-	-	-
			26/6/2020	26/6/2020	26/6/2020
PARAMETER	UOM	LOR	SE208003B.003	SE208003B.004	SE208003B.009
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1



ANALYTICAL RESULTS

SE208003B R0

Metals in TCLP Extract by ICPOES [AN320] Tested: 1/7/2020

			S03_0.1	S04_0.1	S05
			SOIL	SOIL	SOIL
			-	-	-
			26/6/2020	26/6/2020	26/6/2020
			SE208003B.003	SE208003B.004	SE208003B.009
PARAMETER	UOM	LOR			
Arsenic, As	mg/L	0.02	<0.02	<0.02	<0.02
Cadmium, Cd	mg/L	0.001	<0.001	<0.001	<0.001
Chromium, Cr	mg/L	0.005	<0.005	<0.005	<0.005
Copper, Cu	mg/L	0.005	<0.005	<0.005	<0.005
Lead, Pb	mg/L	0.02	<0.02	<0.02	<0.02
Nickel, Ni	mg/L	0.005	<0.005	<0.005	<0.005
Zinc, Zn	mg/L	0.01	0.13	0.12	0.35



ANALYTICAL RESULTS

SE208003B R0

Mercury in TCLP Extract [AN311(Perth) /AN312] Tested: 1/7/2020

			S03_0.1	S04_0.1	S05
			SOIL	SOIL	SOIL
			-	-	-
			26/6/2020	26/6/2020	26/6/2020
PARAMETER	UOM	LOR	SE208003B.003	SE208003B.004	SE208003B.009
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001

METHOD

METHODOLOGY SUMMARY

AN006	Contaminants of interest in a waste material are leached out of the waste with a selected leaching solution under controlled conditions. The ratio of sample to extraction fluid is 100g to 2L (1 to 20 by mass). The concentration of each contaminant of interest is determined in the leachate by appropriate methods after separation from the sample by filtering. Base on USEPA 1311.
AN006	Extraction Fluid #1: This fluid is made by combining 128.6mL of dilute sodium hydroxide solution and 11.5mL glacial acetic acid with water and diluting to a volume of 2 litres. The pH of this fluid should be 4.93 ± 0.05 .
AN006	Extraction Fluid #2: This fluid is made by diluting 5.7mL glacial acetic acid with water to a volume of 1 litre. The pH of this fluid should be 2.88 ± 0.05 .
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN311(Perth) /AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN320	Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components .
AN320	Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements . Reference APHA 3120 B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the ± sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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Yin, Emily (Sydney)

From: Crawford, Huong (Sydney)
Sent: Tuesday, 30 June 2020 10:07 AM
To: Donovan, Hamish
Cc: Wu, Cleo; AU.SampleReceipt.Sydney (Sydney)
Subject: RE: [EXTERNAL] RE: SE208003 - PS119057

Hi Hamish,

No worries, will book the TCLP below in as SE208003B, due tomorrow, if you don't need them urgently please let us know soon.

The extra part on the updated COC on Sun. was booked in as SE208003A, due today.

The original SE208003 report was sent yesterday.

Kind Regards,

Huong Crawford
Environment, Health & Safety
Production Manager

SGS Australia Pty Ltd
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Phone: +61 (0)2 8594 0403
Fax: +61 (0)2 8594 0499
E-mail: Huong.Crawford@sgs.com
Web: www.au.sgs.com



View Your Results Online: engage.sgs.com

From: Donovan, Hamish <Hamish.Donovan@wsp.com>
Sent: Tuesday, 30 June 2020 8:46 AM
To: Crawford, Huong (Sydney) <Huong.Crawford@sgs.com>
Cc: Wu, Cleo <Cleo.Wu@wsp.com>; AU.SampleReceipt.Sydney (Sydney) <AU.SampleReceipt.Sydney@sgs.com>
Subject: RE: [EXTERNAL] RE: SE208003 - PS119057

*** WARNING: this message is from an EXTERNAL SENDER. Please be cautious, particularly with links and attachments. ***

Hi Huong,

Sorry I forgot to put this on the updated CoC (sent on Sunday), but can you please also schedule this additional analysis?

- 3 SO3 – TCLP for Benzo(a)pyrene and 8 metals
- 4 SO4 – TCLP for Benzo(a)pyrene and 8 metals
- 5 SO5 – TCLP for Benzo(a)pyrene and 8 metals

If possible, can we have the primary results issued today, and the TCLP results issued later? Apologies, I know I'm adding complexity...

Thanks,



Our ref: PS119057-CLM-LTR-001 RevA Side of Block H

2 October 2020

Jeff Jackson
Project Manager
Grindley Construction Pty Ltd
55 Grandview St, Pymble NSW 2073

Waste Classification - South of Block H, Wentworthville Public School

WASTE CLASSIFICATION REPORT	
Date sampled	13 September 2020
Company	Grindley Construction Pty Ltd, ABN 42 003 586 687
Project name	Wentworthville Public School Waste Classification
Site address	South of Block H, 70-100 Fullagar Rd, Wentworthville NSW 2145
Site history and Background	Wentworthville Public School has existed on the current site for 129 years. The school underwent construction between 1943 and 1961 with much of the school layout remaining unchanged to date. Currently, portions of Wentworthville Public School are undergoing refurbishment and redevelopment. The refurbishments and redevelopment works within the site are nearing completion and final detailed excavation and construction works are being undertaken around the: - southern side of the new school hall within 'Block H'; and - southern side of 'Ramp 9' immediately north of the COLA. Both these areas comprise the 'site' and extent of this waste classification as depicted in Attachment A – Figure 1.

Level 27, 680 George Street
Sydney NSW 2000
GPO Box 5394
Sydney NSW 2001

Tel: +61 2 9272 5100
Fax: +61 2 9272 5101
www.wsp.com

WASTE CLASSIFICATION REPORT	
Material identification and source	Material was sampled at seven locations TP01 – TP07 within the site, with samples were taken from both the fill material and the underlying soil to an approximate depth of 0.4 mBGL. Locations TP02 – TP07 typically comprised an asphalt surface, underlain by bituminous gravels (up to 0.2 m), which were laid on top of natural or reworked natural soils. The exception to the above was TP01 which had topsoil at surface underlain by natural clay. Reworked natural clays were typically logged to 0.3m, with orange and grey mottling and cobbles and gravel. Underlying natural material was orange/grey/red clay. Given the proximity to asbestos contaminated soils within the Block H and COLA area, which were typically identified within topsoil and gravelly fill, this classification will only apply to the natural and reworked natural material underlying the asphalt gravels from a depth of 0.3 metres below ground level mbgl. Topsoil and asphalt gravels should be classified separately. Refer to Attachment B for photos of sampled material locations and Attachment E for soil logs.
Samples collected	A total of 16 samples were collected as follows: — TP01_0.1-0.2, TP01_0.3-0.4, — TP02_0.1-0.2, TP02_0.3-0.4, — TP03_0.1-0.2, TP03_0.3-0.4, — TP04_0.1-0.2, TP04_0.3-0.4, — TP05_0.1-0.2, TP05_0.3-0.4, — TP06_0.1-0.2, TP06_0.3-0.4, — TP07_0.1-0.2, TP07_0.3-0.4, — QA1, QA1A (Subsamples of TP02_0.1-0.2), — Trip blank, trip spike and rinsate. A total of twelve samples were tested for chemical analytes to provide the minimum sampling requirement for in-situ soils of 500m² as presented in the NSW EPA <i>Sampling Design Guidelines 1995</i>. Given that the site has been used as a school for over 100 years, samples were analysed for a broad suite of analytes commonly associated with general urban land use.

WASTE CLASSIFICATION REPORT		
Sampling method	A total of 7 test pits were undertaken through the site using the following methodology. — In-field visual screening at up to three locations throughout the soil profile for the assessment of asbestos containing material (ACM). — A 500mL bag sample was taken at representative locations within the soil profile for the assessment of asbestos fines (AF) and fibrous asbestos (FA). — Soil jar samples were collected at representative locations throughout the soil profile for chemical analysis. — Sieving of fill material was completed using a 7mm sieve and 10L bucket in sandy material. Natural clays were assessed by spreading out a 10L equivalent onto a contrasting coloured sheet and inspected for ACM. — Any fragments of ACM were removed for laboratory analysis. — All samples were collected using a new pair of nitrile gloves per sample. The excavator bucket was decontaminated using Decon 90 between locations. — Samples were stored in an insulated cooler box with ice immediately after sampling. Samples were kept chilled prior to and during delivery to the selected National Association of Testing Authorities (NATA) accredited laboratory via a courier under appropriate ‘chain of custody’ documentation.	
Laboratory analytes	— Heavy metals (Arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) — Total recoverable hydrocarbons (TRH) — Benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN)	— Polycyclic aromatic hydrocarbons (PAHs) — Asbestos (quantification % w/w) — Select samples were analysed for polychlorinated biphenyls (PCBs), Organochlorine pesticides (OCPs) and Organophosphorus pesticides (OPPs).
Assessment criteria	The field observations and analytical results are compared to the applicable criteria presented in the NSW Environment Protection Authority (2014) <i>Waste Classification Guidelines</i> as amended.	
Visual/olfactory evidence of contamination	Minor anthropogenic influence such as earthenware pipe and gravels mixed within reworked natural soils were observed. No olfactory evidence of contamination, or visual evidence of ACM was observed.	

WASTE CLASSIFICATION REPORT	
Analytical results and comparison	Concentration of all analytes were either below the laboratory reporting limit or below the contaminant threshold CT1 criteria for general solid waste. For all soil samples, no asbestos was detected and no visual evidence of ACM was observed. The chemical summary table with relevant criteria can be found in Attachment C. Laboratory certificates are in Attachment D.
Waste classification	“GENERAL SOLID WASTE – NON PUTRESCIBLE” This classification applies to the natural and reworked natural soils only, and does not include topsoil, asphalt or gravels associated with asphalt. A validation inspection should be conducted to confirm that the overlying fill material has been appropriately removed prior to excavation and off-site disposal of the natural and reworked clay.
Disposal Requirements: The material classified under this waste classification report is suitable to be disposed to a facility appropriately licensed to accept GENERAL SOLID WASTE – NON PUTRESCIBLE. The suitability of the classified material for recycling must be assessed by the receiving facility.	

Note that this waste classification is considered correct as at the date of sampling. WSP is not responsible for changes to material composition and classification due to activities occurring after this date. This waste classification certificate only relates to the materials described in the ‘Material identification and source’ section and as delineated in Figure 2, Attachment A. Any other materials disposed off-site should be accompanied by their own discrete waste classification report.

WSP notes that asbestos contaminated soils were identified in areas proximal to the location of this classification. Although no asbestos was observed at the time of investigation, WSP notes this investigation was undertaken ‘in-situ’ and only a small representation of soil comprising this waste classification was observed. WSP recommends its presence on-site to inspect the bulk excavation works to verify the absence of asbestos through the material prior to its disposal off-site. WSP will not be liable for asbestos which may be identified in future.

The findings of this waste classification are subject to the limitations attached.

Yours sincerely



Shalini Rome
Graduate Environmental Scientist
Contaminated Land Management

Julie Porter
Principal Environmental Engineer
Contaminated Land Management

LIMITATIONS

Scope of services

This environmental site assessment report (the report) has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the client and WSP (scope of services). In some circumstances the scope of services may have been limited by a range of factors such as time, budget, access and/or site disturbance constraints.

Reliance on data

In preparing the report, WSP has relied upon data, surveys, analyses, designs, plans and other information provided by the client and other individuals and organisations, most of which are referred to in the report (the data). Except as otherwise stated in the report, WSP has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report (conclusions) are based in whole or part on the data, those conclusions are contingent upon the accuracy and completeness of the data. WSP will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP.

Environmental conclusions

In accordance with the scope of services, WSP has relied upon the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

On all sites, varying degrees of non-uniformity of the vertical and horizontal soil or groundwater conditions are encountered. Hence no monitoring, common testing or sampling technique can eliminate the possibility that monitoring or testing results/samples are not totally representative of soil and/or groundwater conditions encountered. The conclusions are based upon the data and the environmental field monitoring and/or testing and are therefore merely indicative of the environmental condition of the site at the time of preparing the report, including the presence or otherwise of contaminants or emissions.

Also, it should be recognised that site conditions, including the extent and concentration of contaminants, can change with time.

Within the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

Report for benefit of client

The report has been prepared for the benefit of the client and no other party. WSP assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including without limitation matters arising from any negligent act or omission of WSP or for any loss or damage suffered by any other party relying upon the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions and should make their own enquiries and obtain independent advice in relation to such matters.

Other limitations

WSP will not be liable to update or revise the report to take into account any events or emergent circumstances or facts occurring or becoming apparent after the date of the report.

The scope of services did not include any assessment of the title to or ownership of the properties, buildings and structures referred to in the report nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

ATTACHMENT A

FIGURES



Legend

- Block H Excavation Extent
- Indicative Waste Classification extent
- X Test Pit



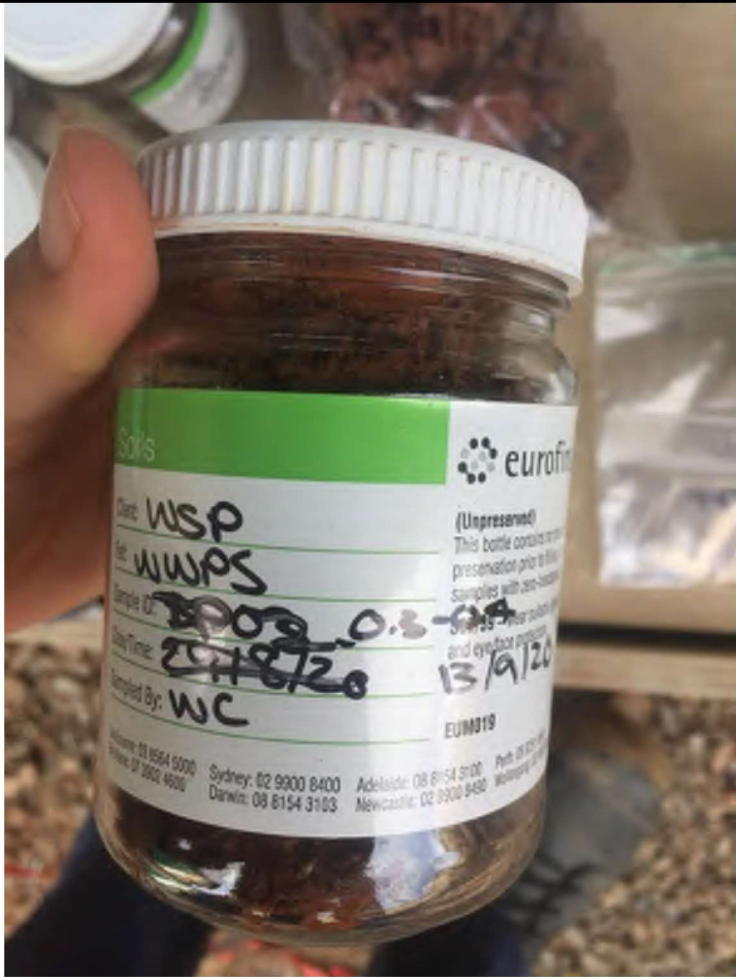
Client:	Grindley Constructions Pty Ltd	
Project:	Wentworthville Public School – 70 – 100 Fullagar Road, South Wentworthville NSW	
Title	WWPS South of Block H – Waste Classification	
Project no.:	PS119057	Figure 1

ATTACHMENT B
MATERIAL PHOTOGRAPHS

		PHOTOGRAPHIC LOG (Appendix B)	
Client Name Grindley Construction Pty Ltd	Site Location Wentworthville Public School		Project No. PS119057

Photo No.	Date	
1	13/09/2020	
Description TP02 Test pit location		

		PHOTOGRAPHIC LOG (Appendix B)	
Client Name Grindley Construction Pty Ltd	Site Location Wentworthville Public School		Project No. PS119057

Photo No.	Date	
2	13/09/2020	
Description Example of Jar sample (TP02_0.3-0.4)		

		PHOTOGRAPHIC LOG (Appendix B)	
Client Name Grindley Construction Pty Ltd	Site Location Wentworthville Public School		Project No. PS119057

Photo No.	Date	
3	13/09/2020	
Description TP03 test pit location		

		PHOTOGRAPHIC LOG (Appendix B)	
Client Name Grindley Construction Pty Ltd	Site Location Wentworthville Public School	Project No. PS119057	

Photo No. 4	Date 13/09/2020	
Description TP05 test pit location		

ATTACHMENT C

SUMMARY RESULTS

	TPH					BTEX					PAH		Metals										OCP		OPP		PCB		Asbestos		
	Cl- C9	Cl10 - Cl14	Cl15 - Cl18	C19 - C26	Cl10 - C26 (Sum)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene (Sum)	Benzo(a)Pyrene	PAHs (Sum)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Endosulfan	Scheduled Chemical	Chlorpyrifos	Moderately Harmful Pesticides	PCBs (Sum of total)	Asbestos (presence)	Asbestos Af/FA			
EQL	10	20	50	50	50	0.1	0.1	0.1	0.2	0.1	0.3	0.5	0.5	2	0.4	2	5	5	0.1	2	5	50	0.05	0.05	0.2	0.1					
NSW 2014 General Solid Waste CT1 (No Leaching)	650				10,000	10	288	600			1,000	0.8	200	100	20	100 ^{#1}		100	4	40		60,000 ^{#2}	50	4	250	50					
NSW 2014 General Solid Waste SCC1 (with leached)	650				10,000	18	518	1,080			1,800	10	200	500	100	1,900 ^{#1}		1,500	50	1,050		108,000 ^{#2}	50	7.5	250	50					
NSW 2014 General Solid Waste TCLP1 (leached)												0.04																			
NSW 2014 Restricted Solid Waste CT2 (No Leaching)	2,600				40,000	40	1,152	2,400			4,000	3.2	800	400	80	400 ^{#1}		400	16	160		240,000 ^{#2}	50	16	1,000	50					
NSW 2014 Restricted Solid Waste SCC2 (with leached)	1,600				40,000	12	1,672	1,600			2,000	1.6	800	400	80	7,000 ^{#1}		6,000	200	1,100		111,000 ^{#2}	50	30	1,000	50					
NSW 2014 Restricted Solid Waste TCLP2 (leached)												0.16																			
Field ID	Date																														
TP01_0.1-0.2	13/09/2020	<20	<20	130	110	240	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	7.8	<0.4	18	25	71	<0.1	16	130	-	<0.05	<0.2	<0.2	<0.5	n	<0.001		
TP01_0.3-0.4	13/09/2020	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	10	<0.4	19	19	15	<0.1	9.0	38	-	-	-	-	-	-	-		
TP02_0.1-0.2	13/09/2020	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	12	<0.4	20	20	26	0.2	8.2	30	-	-	-	-	-	n	<0.001		
TP03_0.1-0.2	13/09/2020	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	11	<0.4	19	22	33	<0.1	8.7	43	-	<0.05	<0.2	<0.5	n	<0.001			
TP03_0.3-0.4	13/09/2020	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	11	<0.4	19	19	16	<0.1	5.3	29	-	-	-	-	-	-	-		
TP04_0.1-0.2	13/09/2020	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	13	<0.4	23	24	19	<0.1	13	41	-	-	-	-	-	n	<0.001		
TP05_0.1-0.2	13/09/2020	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	12	<1	17	10	24	<0.1	5	17	<50	<0.05	<0.05	-	<0.1	n	<0.001		
TP05_0.3-0.4	13/09/2020	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	13	<0.4	31	27	25	<0.1	15	47	-	-	-	-	-	-	-		
TP06_0.2-0.3	13/09/2020	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	11	<0.4	19	11	17	<0.1	6.7	21	-	-	-	-	-	-	-		
TP07_0.2-0.3	13/09/2020	<10	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	11	<0.4	21	13	18	<0.1	7.5	25	<50	<0.05	<0.05	-	<0.1	n	<0.001		
TP07_0.4-0.5	13/09/2020	<20	<20	<50	<50	<50	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.5	<0.5	11	<0.4	21	21	15	<0.1	7.5	30	-	-	-	-	-	-	-		
Comments																															

#1 As Chromium VI

#2 Endosulfan means the total of Endosulfan I, Endosulfan II and Endosulfan sulfate.



				TPH						BTEX						PAH			
				C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum)	TPH C37-C40	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene (Sum)	1-Methylnaphthalene	2-methylnaphthalene	PAHs (Sum)	Total Positive PAHs
EQL				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
				20	20	45	45	50	100	0.1	0.1	0.1	0.2	0.1	0.3	0.1	0.1	0.5	0.8
Lab Report Number	Field ID	Date	Matrix Type																
744055	TP02_0.1-0.2	13/09/2020	soil	<20	<20	<50	<50	<50	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	<0.5	-
	QA1	13/09/2020	soil	<20	<20	<50	<50	<50	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	<0.5	-
	RPD			0	0	0	0	0	-	0	0	0	0	0	0	-	-	0	-
744055	TP02_0.1-0.2	13/09/2020	soil	<20	<20	<50	<50	<50	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	<0.5	-
SE211210	QA1A	13/09/2020	soil	<20	<20	<45	<45	<110	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.1	<0.1	<0.8	<0.8
RPD				0	0	0	0	0	-	0	0	0	0	0	0	-	-	0	-

Metals											
				Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				1	0.3	0.5	0.5	1	0.05	0.5	2
Lab Report Number	Field ID	Date	Matrix Type								
744055	TP02_0.1-0.2	13/09/2020	soil	12	<0.4	20	20	26	0.2	8.2	30
	QA1	13/09/2020	soil	10	<0.4	17	17	27	<0.1	7.0	26
	RPD			18	0	16	16	4	67	16	14
744055	TP02_0.1-0.2	13/09/2020	soil	12	<0.4	20	20	26	0.2	8.2	30
SE211210	QA1A	13/09/2020	soil	9	<0.3	11	11	14	<0.05	2.7	13
RPD				29	0	58	58	60	120	101	79



				TPH					BTEX						PAH
				C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene (Sum)	PAHs (Sum)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				20	50	100	100	100	1	1	1	2	1	3	1
Lab Report Number	Field ID	Date	Sample Type	<20	<50	<100	<100	<100	<1	<1	<1	<2	<1	<3	<1
744055	RB130920	13/09/2020	Rinsate												

2 of 2

**Trip Spikes**

Lab Report Number	Sample Type	Matrix Type	Field ID	Sampled Date/Time	Chem Name	Spike Recovery %	Method Name	Sample Code
744055	Trip_S	soil	Trip spike Soil	13/09/2020	Ethylbenzene	75	LTM-ORG-2010 TRH C6-C40	N20-Se24649
744055	Trip_S	soil	Trip spike Soil	13/09/2020	Xylene (m & p)	75	LTM-ORG-2010 TRH C6-C40	N20-Se24649
744055	Trip_S	soil	Trip spike Soil	13/09/2020	Toluene	82	LTM-ORG-2010 TRH C6-C40	N20-Se24649
744055	Trip_S	soil	Trip spike Soil	13/09/2020	Xylene (Sum)	78	LTM-ORG-2010 TRH C6-C40	N20-Se24649
744055	Trip_S	soil	Trip spike Soil	13/09/2020	Benzene	83	LTM-ORG-2010 TRH C6-C40	N20-Se24649
744055	Trip_S	soil	Trip spike Soil	13/09/2020	Naphthalene	83	LTM-ORG-2010 TRH C6-C40	N20-Se24649
744055	Trip_S	soil	Trip spike Soil	13/09/2020	Xylene (o)	79	LTM-ORG-2010 TRH C6-C40	N20-Se24649
744055	Trip_S	soil	Trip spike Soil	13/09/2020	C6 - C10	72	LTM-ORG-2010 TRH C6-C40	N20-Se24649
744055	Trip_S	soil	Trip spike Soil	13/09/2020	C6 - C9	75	LTM-ORG-2010 TRH C6-C40	N20-Se24649

Trip Spike Recoveries. Where no lab LCL and UCL is available, user defined limits between 30% and 150% have been adopted for non-compliance.

ATTACHMENT D
LABORATORY CERTIFICATES

WSP Australia P/L Newcastle
PO Box 1162
Newcastle
NSW 2300



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: Hamish Donovan

Report 744055-S
Project name WWPS BLOCK H_OSDNORTH
Project ID PS119057
Received Date Sep 15, 2020

Client Sample ID			TP01_0.1-0.2	TP01_0.3-0.4	TP02_0.1-0.2	TP03_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N20-Se24642	N20-Se24643	N20-Se24644	N20-Se24645
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
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	130	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	110	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	240	< 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	%	119	132	119	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
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

Client Sample ID			TP01_0.1-0.2	TP01_0.3-0.4	TP02_0.1-0.2	TP03_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N20-Se24642	N20-Se24643	N20-Se24644	N20-Se24645
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
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	%	96	95	96	96
p-Terphenyl-d14 (surr.)	1	%	101	95	94	97
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
d-BHC	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	-	-	< 0.2
Toxaphene	1	mg/kg	< 1	-	-	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2	-	-	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2	-	-	< 0.2
Dibutylchloroendate (surr.)	1	%	82	-	-	91
Tetrachloro-m-xylene (surr.)	1	%	82	-	-	77
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	-	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	-	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
EPN	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2

Client Sample ID			TP01_0.1-0.2	TP01_0.3-0.4	TP02_0.1-0.2	TP03_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			N20-Se24642	N20-Se24643	N20-Se24644	N20-Se24645
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Naled	0.2	mg/kg	< 0.2	-	-	< 0.2
Omethoate	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	109	-	-	112
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	-	-	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	-	-	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	-	-	< 0.5
Dibutylchlorendate (surr.)	1	%	82	-	-	91
Tetrachloro-m-xylene (surr.)	1	%	82	-	-	77
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	120	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	120	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	7.8	10	12	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	19	20	19
Copper	5	mg/kg	25	19	20	22
Lead	5	mg/kg	71	15	26	33
Mercury	0.1	mg/kg	< 0.1	< 0.1	0.2	< 0.1
Nickel	5	mg/kg	16	9.0	8.2	8.7
Zinc	5	mg/kg	130	38	30	43
% Moisture	1	%	27	22	21	16

Client Sample ID			TP03_0.3-0.4	TP04_0.1-0.2	TP05_0.3-0.4	Trip spike Soil
Sample Matrix			Soil	Soil	Soil	Trip Spike (solid)
Eurofins Sample No.			N20-Se24646	N20-Se24647	N20-Se24648	N20-Se24649
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	134	116	110	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	-
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	69	82	INT	-
p-Terphenyl-d14 (surr.)	1	%	95	99	53	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-

Client Sample ID			TP03_0.3-0.4	TP04_0.1-0.2	TP05_0.3-0.4	Trip spike Soil
Sample Matrix			Soil	Soil	Soil	Trip Spike (solid)
Eurofins Sample No.			N20-Se24646	N20-Se24647	N20-Se24648	N20-Se24649
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	11	13	13	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	19	23	31	-
Copper	5	mg/kg	19	24	27	-
Lead	5	mg/kg	16	19	25	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	5.3	13	15	-
Zinc	5	mg/kg	29	41	47	-
% Moisture	1	%	23	22	23	-
TRH C6-C10	1	%	-	-	-	72
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	-	83
TRH C6-C9	1	%	-	-	-	75
BTEX						
Benzene	1	%	-	-	-	83
Ethylbenzene	1	%	-	-	-	75
m&p-Xylenes	1	%	-	-	-	75
o-Xylene	1	%	-	-	-	79
Toluene	1	%	-	-	-	82
Xylenes - Total	1	%	-	-	-	78
4-Bromofluorobenzene (surr.)	1	%	-	-	-	88

Client Sample ID			Trip spike Blank	TP06_0.2-0.3	TP07_0.2-0.3	TP07_0.4-0.5
Sample Matrix			Trip Blank (solid)	Soil	Soil	Soil
Eurofins Sample No.			N20-Se24650	N20-Se24653	N20-Se24654	N20-Se24655
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
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
TRH C15-C28	50	mg/kg	-	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	-	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 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	%	94	130	84	75
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	-	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	-	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	-	< 20	< 20	< 20

Client Sample ID			Trip spike Blank	TP06_0.2-0.3	TP07_0.2-0.3	TP07_0.4-0.5
Sample Matrix			Trip Blank (solid)	Soil	Soil	Soil
Eurofins Sample No.			N20-Se24650	N20-Se24653	N20-Se24654	N20-Se24655
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	80	84	74
p-Terphenyl-d14 (surr.)	1	%	-	88	95	83
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	-
4,4'-DDD	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDE	0.05	mg/kg	-	-	< 0.05	-
4,4'-DDT	0.05	mg/kg	-	-	< 0.05	-
a-BHC	0.05	mg/kg	-	-	< 0.05	-
Aldrin	0.05	mg/kg	-	-	< 0.05	-
b-BHC	0.05	mg/kg	-	-	< 0.05	-
d-BHC	0.05	mg/kg	-	-	< 0.05	-
Dieldrin	0.05	mg/kg	-	-	< 0.05	-
Endosulfan I	0.05	mg/kg	-	-	< 0.05	-
Endosulfan II	0.05	mg/kg	-	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	-
Endrin	0.05	mg/kg	-	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	-
Endrin ketone	0.05	mg/kg	-	-	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	-	< 0.05	-
Heptachlor	0.05	mg/kg	-	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	-
Methoxychlor	0.2	mg/kg	-	-	< 0.2	-
Toxaphene	1	mg/kg	-	-	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.2	-

Client Sample ID			Trip spike Blank	TP06_0.2-0.3	TP07_0.2-0.3	TP07_0.4-0.5
Sample Matrix			Trip Blank (solid)	Soil	Soil	Soil
Eurofins Sample No.			N20-Se24650	N20-Se24653	N20-Se24654	N20-Se24655
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Dibutylchlorendate (surr.)	1	%	-	-	105	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	93	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Bolstar	0.2	mg/kg	-	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	-
Coumaphos	2	mg/kg	-	-	< 2	-
Demeton-S	0.2	mg/kg	-	-	< 0.2	-
Demeton-O	0.2	mg/kg	-	-	< 0.2	-
Diazinon	0.2	mg/kg	-	-	< 0.2	-
Dichlorvos	0.2	mg/kg	-	-	< 0.2	-
Dimethoate	0.2	mg/kg	-	-	< 0.2	-
Disulfoton	0.2	mg/kg	-	-	< 0.2	-
EPN	0.2	mg/kg	-	-	< 0.2	-
Ethion	0.2	mg/kg	-	-	< 0.2	-
Ethoprop	0.2	mg/kg	-	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	-
Fenitrothion	0.2	mg/kg	-	-	< 0.2	-
Fensulfotthion	0.2	mg/kg	-	-	< 0.2	-
Fenthion	0.2	mg/kg	-	-	< 0.2	-
Malathion	0.2	mg/kg	-	-	< 0.2	-
Merphos	0.2	mg/kg	-	-	< 0.2	-
Methyl parathion	0.2	mg/kg	-	-	< 0.2	-
Mevinphos	0.2	mg/kg	-	-	< 0.2	-
Monocrotophos	2	mg/kg	-	-	< 2	-
Naled	0.2	mg/kg	-	-	< 0.2	-
Omethoate	2	mg/kg	-	-	< 2	-
Phorate	0.2	mg/kg	-	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	-
Pyrazophos	0.2	mg/kg	-	-	< 0.2	-
Ronnel	0.2	mg/kg	-	-	< 0.2	-
Terbufos	0.2	mg/kg	-	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	-
Tokuthion	0.2	mg/kg	-	-	< 0.2	-
Trichloronate	0.2	mg/kg	-	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	-	89	-
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	-
Aroclor-1232	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	-	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	-	< 0.5	-
Total PCB*	0.5	mg/kg	-	-	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	-	105	-
Tetrachloro-m-xylene (surr.)	1	%	-	-	93	-

Client Sample ID			Trip spike Blank	TP06_0.2-0.3	TP07_0.2-0.3	TP07_0.4-0.5
Sample Matrix			Trip Blank (solid)	Soil	Soil	Soil
Eurofins Sample No.			N20-Se24650	N20-Se24653	N20-Se24654	N20-Se24655
Date Sampled			Sep 13, 2020	Sep 13, 2020	Sep 13, 2020	Sep 13, 2020
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	-	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	-	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	< 100	< 100
Heavy Metals						
Arsenic	2	mg/kg	-	11	11	11
Cadmium	0.4	mg/kg	-	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	-	19	21	21
Copper	5	mg/kg	-	11	13	21
Lead	5	mg/kg	-	17	18	15
Mercury	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	-	6.7	7.5	7.5
Zinc	5	mg/kg	-	21	25	30
% Moisture	1	%	-	15	14	24
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-	-	-
Total Recoverable Hydrocarbons						
TRH C6-C10	20	mg/kg	< 20	-	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-	-	-

Client Sample ID			QA1
Sample Matrix			Soil
Eurofins Sample No.			N20-Se24659
Date Sampled			Sep 13, 2020
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-C36 (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	%	70
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.5	mg/kg	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20

Client Sample ID			QA1
Sample Matrix			Soil
Eurofins Sample No.			N20-Se24659
Date Sampled			Sep 13, 2020
Test/Reference	LOR	Unit	
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	%	82
p-Terphenyl-d14 (surr.)	1	%	102
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	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
Heavy Metals			
Arsenic	2	mg/kg	10
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	17
Copper	5	mg/kg	17
Lead	5	mg/kg	27
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	7.0
Zinc	5	mg/kg	26
% Moisture	1	%	24

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.

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: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 16, 2020	14 Days
BTEX - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 16, 2020	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 16, 2020	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Sep 16, 2020	14 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Sep 16, 2020	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Sep 16, 2020	14 Days
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Sep 16, 2020	28 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 16, 2020	
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Sep 16, 2020	180 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Sep 15, 2020	14 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Sep 16, 2020	14 Days

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Address: PO Box 1162
Newcastle
NSW 2300

Order No.:
Report #: 744055
Phone: 02 4929 8300
Fax: 02 4929 7299

Received: Sep 15, 2020 8:00 AM
Due: Sep 16, 2020
Priority: 1 Day
Contact Name: Hamish Donovan

Project Name: WWPS BLOCK H_OSDNORTH
Project ID: PS119057

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	Moisture Set	Eurofins Suite B7	Eurofins Suite B7 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Suite B10B:TRH/BTEXN/PAH/OC/OP/PCBM/8
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
Newcastle Laboratory														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	TP01_0.1-0.2	Sep 13, 2020		Soil	N20-Se24642	X			X					X
2	TP01_0.3-0.4	Sep 13, 2020		Soil	N20-Se24643				X	X				
3	TP02_0.1-0.2	Sep 13, 2020		Soil	N20-Se24644	X			X	X				
4	TP03_0.1-0.2	Sep 13, 2020		Soil	N20-Se24645	X			X					X
5	TP03_0.3-0.4	Sep 13, 2020		Soil	N20-Se24646				X	X				
6	TP04_0.1-0.2	Sep 13, 2020		Soil	N20-Se24647	X			X	X				
7	TP05_0.3-0.4	Sep 13, 2020		Soil	N20-Se24648				X	X				
8	Trip spike Soil	Sep 13, 2020		Trip Spike (solid)	N20-Se24649								X	

Company Name: WSP Australia P/L Newcastle
Address: PO Box 1162
Newcastle
NSW 2300

Order No.:
Report #: 744055
Phone: 02 4929 8300
Fax: 02 4929 7299

Received: Sep 15, 2020 8:00 AM
Due: Sep 16, 2020
Priority: 1 Day
Contact Name: Hamish Donovan

Project Name: WWPS BLOCK H_OSDNORTH
Project ID: PS119057

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - WA guidelines	CANCELLED	HOLD	Moisture Set	Eurofins Suite B7	Eurofins Suite B7 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Suite B10B:TRH/BTEXN/PAH/OC/OP/PCBM8
Melbourne Laboratory - NATA Site # 1254 & 14271														
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794														
Perth Laboratory - NATA Site # 23736														
9	Trip spike Blank	Sep 13, 2020		Trip Blank (solid)	N20-Se24650							X		
10	LAB Trip spike	Sep 13, 2020		Trip Spike (solid)	N20-Se24651								X	
11	RB130920	Sep 13, 2020		Water	N20-Se24652						X			
12	TP06_0.2-0.3	Sep 13, 2020		Soil	N20-Se24653	X			X	X				
13	TP07_0.2-0.3	Sep 13, 2020		Soil	N20-Se24654	X			X					X
14	TP07_0.4-0.5	Sep 13, 2020		Soil	N20-Se24655				X	X				
15	TP02_0.3-0.4	Sep 13, 2020		Soil	N20-Se24656			X						
16	TP04_0.3-0.4	Sep 13, 2020		Soil	N20-Se24657			X						
17	TP06_0.4-0.5	Sep 13, 2020		Soil	N20-Se24658			X						
18	QA1	Sep 13, 2020		Soil	N20-Se24659				X	X				
19		Sep 13, 2020		Soil	N20-Se24660		X							

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Sample Detail	Asbestos - WA guidelines	CANCELLED	HOLD	Moisture Set	Eurofins Suite B7	Eurofins Suite B7 (filtered metals)	BTEXN and Volatile TRH	BTEXN and Volatile TRH	Suite B10B:TRH/BTEXN/PAH/OCP/OPP/PCBM/8
Melbourne Laboratory - NATA Site # 1254 & 14271									
Sydney Laboratory - NATA Site # 18217	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794									
Perth Laboratory - NATA Site # 23736									
Test Counts	6	1	3	11	8	1	1	2	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid 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. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. 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	US Department of Defense Quality Systems Manual Version 5.3
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 20-130% Phenols & 50-150% PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 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.