

12 September, 2017

Sydney Anglican Schools Corporation
C/ Terroir
Attn: Lea Lennon
By email

Dear Lea,

RE: WASTE CLASSIFICATION ASSESSMENT – PROPOSED SYDNEY ANGLICAN JUNIOR SCHOOL, LOT 14 DP 1120290, 37 WORCESTER ROAD, ROUSE HILL, NSW

1. BACKGROUND

This waste classification assessment has been prepared by Martens and Associates (MA) to support the offsite disposal of soil from 37 Worcester Road, Rouse Hill, NSW (the site). Material is to be removed as part of remedial works to allow construction of a proposed junior school.

2. SITE INSPECTION & LABORATORY TESTING

Inspection, test pit excavation and soil sampling were completed on 15 August 2017 as part of a detailed site investigation (DSI, MA ref P1504946JR03V02, 7 September 2017). This document should be read in conjunction with the DSI report. Investigations were completed using an excavator and taken to natural soils. The following works were conducted within the area of the site requiring remediation (as shown by the 'extent of anthropogenic fill' on plan PS01-J101):

- Walkover inspection to review site condition.
- Four test pits, excavated to between 0.5 and 1.7 meters below ground level (mBGL) using an excavator.
- Sampling of soils from the former dwelling, former shed and filled pool.

14 soil samples were selected for laboratory analysis. Samples were delivered to Envirolab Pty Ltd (an independent NATA accredited testing laboratory), where 10 were analysed for BTEX, TRH, PAHs, PCBs, pesticides, asbestos and heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc) and 5 were analysed for pesticides and 8 heavy metals.

The following comments/observations were noted:

- Fill, comprising of clay with trace silt, fine to medium gravels, large concrete boulders, reinforcement mesh, scrap metal and construction waste, was observed down to a depth of 1.7 mBGL in the filled pool area.

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- Concrete pool foundations and associated mesh reinforcement was encountered at a depth of 1.7 mBGL in the filled pool area.
- Disturbed soil with fragments of PACM and anthropogenic inclusions were observed in the dwelling footprint.
- Material underlying fill and disturbed soils is typically silty clay and/or clay.

3. LABORATORY RESULTS

Laboratory analytical results (Envirolab report number 173536) were compared against NSW EPA (2014) guidelines to determine waste classification status for anthropogenic inclusion impacted fill material on the site.

Laboratory results indicated one exceedance of CT1 criteria from NSW EPA (2014) **(4946/TP101a/0.2)** for benzo(a)pyrene. Subsequently, TCLP testing was undertaken to determine the leachable concentration of benzo(a)pyrene for this sample.

Laboratory TCLP results (Envirolab report number 173536-A) found benzo(a)pyrene concentrations below SCC1 and TCLP1.

Laboratory results (Envirolab report number 173536) also indicated that the fragment of fibrous piping material sent for analysis tested positive for containing asbestos.

4. CONCLUSIONS

Due to the presence of asbestos containing material (ACM) in site fill and disturbed soils within former dwelling, and in light of the chemical analysis described in Section 3 above, fill material (filled pool and disturbed soils in former dwelling footprint) is classified as **'special waste (asbestos waste) - general solid waste (non-putrescible)'** in accordance with NSW EPA (2014).

If you require any further information, please do not hesitate to contact the undersigned.

For and on behalf of

MARTENS & ASSOCIATES PTY LTD



DANIEL O'SULLIVAN

BEng(Civil/Environmental)

Environmental Engineer

ATTACHED:

1. Site Sampling Plan
2. Test Pit logs
3. Envirolab Certificate of Analysis – 173536
4. Envirolab Certificate of Analysis – 173536-A



KEY

APPROXIMATE SITE BOUNDARY

TEST PIT

SURFACE SAMPLE

MATERIAL SAMPLE

EXTENT OF ANTHROPEGENIC FILL

REV		DESCRIPTION	DATE	DRAWN	DESIGNED	CHECKED	APPRVD	SCALE		GRID	DATUM	PROJECT MANAGER	CLIENT	 Consulting Engineers Environment Water Geotechnical Civil Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au		DRAWING TITLE			
A	INITIAL RELEASE		07/09/2017	KH/JCF	DO			0 2 4 6 8 10 12 14 16 18 20 A1 (A3) 1:200 (1:400) METRES DISCLAIMER & COPYRIGHT This plan must not be used for construction unless signed as approved by principal certifying authority. All measurements in millimetres unless otherwise specified. This drawing must not be reproduced in whole or part without prior written consent of Martens & Associates Pty Ltd. (C) Copyright Martens & Associates Pty Ltd	---	---	JF	ANGLICAN SCHOOLS CORPORATIONS	PROJECT NAME/PLANSET TITLE DETAILED SITE INVESTIGATION			SITE TESTING LOCATIONS PLAN			
														PROJECT NO.		PLANSET NO.	RELEASE NO.	DRAWING NO.	REVISION
														P1504 946		PS01	R01	PS01-J101	A
																		DRAWING ID: P1504 946-PS01-R01-J101	
																		0 2 4 6 8 10 12 14 16 18 20	

A1 / A3 LANDSCAPE (A1L3_v02.0 01)

Suite 201, 20 George St, Hornsby, NSW 2077 Australia Phone: (02) 9476 9999 Fax: (02) 9476 8767 Email: mail@martens.com.au Internet: www.martens.com.au PROJECT NO. | | PLANSET NO. | RELEASE NO. | DRAWING NO. | REVISION || | | | | | | | | | | | DETAILED SITE INVESTIGATION | | P1504946 | PS01 | R01 | PS01-J101 | A |
											37 WORCESTER ROAD, ROUSE HILL, NSW LOT 14 DP 1120290						

MARTENS 2.00 LIB GLB Log MARTENS BOREHOLE P1604845 BHTP01V01 170828.GPJ <-DrawingFile>> 06/09/2017 12:41 8.30.004 D:\ghel Lab and In Silu Tool - D\GD\ Lib: Martens 2.00 2016-11-13 P16 Martens 2.00 2016-11-13

CLIENT		Sydney Anglican Schools Corporation		COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP101A					
PROJECT		Engineering Services		LOGGED	DO	CHECKED		Sheet 1 OF 1					
SITE		37 Worcester Road, Rouse Hill, NSW		GEOLOGY	Ashfield Shale	VEGETATION	None	PROJECT NO. P1504946					
EQUIPMENT		Excavator		EASTING		RL SURFACE	65 m	DATUM	AHD				
EXCAVATION DIMENSIONS		ø100 mm x 1.70 m depth		NORTHING		ASPECT	South	SLOPE	<20%				
Excavation			Sampling		Field Material Description								
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	L	Not Encountered	65.00		P4946/101A/0.2/S/1 D 0.20 m			CL	FILL: CLAY, brown, with trace silt, fine to medium gravels, anthropogenic inclusions (concrete cobbles and boulders, steel reinforcement mesh, scrap metal, construction waste).				FILL 0.10: PACM sheeting at surface.
			0.2										
			0.4										
			0.6										
			0.8										
			1.0										
			1.2										
			1.4										
			1.6										
			1.70		P4946/101A/1.7/S/1 D 1.70 m				Hole Terminated at 1.70 m				
			1.8										
EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS													
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CLIENT	Sydney Anglican Schools Corporation			COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP101B				
PROJECT	Engineering Services			LOGGED	DO	CHECKED		Sheet 1 OF 1				
SITE	37 Worcester Road, Rouse Hill, NSW			GEOLOGY	Ashfield Shale	VEGETATION	None	PROJECT NO. P1504946				
EQUIPMENT		Excavator			EASTING		RL SURFACE	65 m	DATUM AHD			
EXCAVATION DIMENSIONS		ø100 mm x 1.60 m depth			NORTHING		ASPECT	South	SLOPE <20%			
Excavation				Sampling		Field Material Description						
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	L	Not Encountered		65.00				SIC	FILL: Silty CLAY, low plasticity, brown/grey, fine to medium gravels, anthropogenic inclusions - (concrete, tile, brick).			FILL
			0.2		P4946/101B/0.20/S/1 D 0.20 m					D		
			0.4									
			0.50									
			64.50				SIC	Silty CLAY, low plasticity, dark brown.			RESIDUAL SOIL	
			0.6									
					P4946/101B/0.7/S/1 D 0.70 m							
			0.80									
			64.20				CI-CH	CLAY, medium to high plasticity, red.	D - M			
					P4946/101B/0.9/S/1 D 0.90 m							
			1.2						SHALE, moderately to highly weathered.			WEATHERED ROCK
			1.4							D		
			1.60						Hole Terminated at 1.60 m			
			1.8									
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CLIENT	Sydney Anglican Schools Corporation	COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP102 Sheet 1 OF 1 PROJECT NO. P1504946	
PROJECT	Engineering Services	LOGGED	DO	CHECKED			
SITE	37 Worcester Road, Rouse Hill, NSW	GEOLOGY	Ashfield Shale	VEGETATION	None		
EQUIPMENT	Excavator	EASTING		RL SURFACE	66 m	DATUM	AHD
EXCAVATION DIMENSIONS	ø100 mm x 0.70 m depth	NORTHING		ASPECT	South	SLOPE	<20%

Excavation					Sampling		Field Material Description						
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	L	Not Encountered		66.00	P4946/102/0.1/S/1 D 0.10 m 0.20 65.80 P4946/102/0.3/S/1 D 0.30 m 0.40 65.60 0.50 65.50 0.6 P4946/102/0.60/S/1 D 0.60 m 0.70			SICL	Clayey SILT, dark brown, fine gravels.	D - M			TOPSOIL
						CI	CLAY, medium plasticity, grey, with fine to medium ironstone gravels.	FILL					
						SIC	Silty CLAY, low plasticity, dark brown.	RESIDUAL SOIL					
						CI-CH	CLAY, medium to high plasticity, red, with trace silt.						
									Hole Terminated at 0.70 m				
			0.8										
			1.0										
			1.2										
			1.4										
			1.6										
			1.8										

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CLIENT	Sydney Anglican Schools Corporation		COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP103	
PROJECT	Engineering Services		LOGGED	DO	CHECKED		Sheet 1 OF 1	
SITE	37 Worcester Road, Rouse Hill, NSW		GEOLOGY	Ashfield Shale	VEGETATION	None	PROJECT NO. P1504946	
EQUIPMENT	Excavator		EASTING		RL SURFACE	64 m	DATUM	AHD
EXCAVATION DIMENSIONS	ø100 mm x 0.80 m depth		NORTHING		ASPECT	South	SLOPE	<20%

Excavation			Sampling		Field Material Description									
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
E	L	Not Encountered	64.00					SP	FILL: Gravelly SAND, crushed sandstone and shale.				FILL	
			0.20	63.80	P4946/103/0.1/S/1 D 0.10 m						D			
					P4946/103/0.3/S/1 D 0.30 m									
			0.50	63.50										
			0.6		P4946/103/0.6/S/1 D 0.60 m			CL-CH	CLAY, medium to high plasticity, red, with trace silt.		D - M			
			0.8	0.80					Hole Terminated at 0.80 m					
			1.0											
			1.2											
			1.4											
			1.6											
			1.8											

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CLIENT	Sydney Anglican Schools Corporation	COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP104 Sheet 1 OF 1 PROJECT NO. P1504946	
PROJECT	Engineering Services	LOGGED	DO	CHECKED			
SITE	37 Worcester Road, Rouse Hill, NSW	GEOLOGY	Ashfield Shale	VEGETATION	None		
EQUIPMENT	Excavator	EASTING		RL SURFACE	62 m	DATUM	AHD
EXCAVATION DIMENSIONS	ø100 mm x 0.50 m depth	NORTHING		ASPECT	South	SLOPE	<20%

Excavation					Sampling		Field Material Description						
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	L	Not Encountered		62.00				SIC	ASPHALT, sealed driveway, 50mm.	D			ROAD SURFACE
			0.05										
				61.95					Silty CLAY, low plasticity, red/brown, fine gravels.				
			0.2										
			0.4		P4946/104/0.4/S/1 D 0.40 m								
			0.50										
			0.6						Hole Terminated at 0.50 m				
			0.8										
			1.0										
			1.2										
			1.4										
			1.6										
			1.8										

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TEST PIT**

CLIENT	Sydney Anglican Schools Corporation	COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP105 Sheet 1 OF 1 PROJECT NO. P1504946	
PROJECT	Engineering Services	LOGGED	DO	CHECKED			
SITE	37 Worcester Road, Rouse Hill, NSW	GEOLOGY	Ashfield Shale	VEGETATION	None		
EQUIPMENT	Excavator	EASTING		RL SURFACE	61 m	DATUM	AHD
EXCAVATION DIMENSIONS	ø100 mm x 0.60 m depth	NORTHING		ASPECT	South	SLOPE	<20%

Excavation					Sampling		Field Material Description						
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
E	L	Not Encountered	61.00	P4946/105/0.50/S/1 D 0.50 m				SP	ASPHALT, sealed driveway, 50mm.	D		ROAD SURFACE	
			0.05						FILL: Gravelly SAND, crushed sandstone and shale.			FILL	
			60.95										
			0.2										
			0.30										
			60.70						SIC			FILL: Silty CLAY, low plasticity, red/brown, fine gravels.	RESIDUAL SOIL
			0.4										
			0.6										
			0.60										
			0.8										
			1.0										
			1.2										
			1.4										
			1.6										
			1.8										

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CLIENT	Sydney Anglican Schools Corporation	COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP107 Sheet 1 OF 1 PROJECT NO. P1504946	
PROJECT	Engineering Services	LOGGED	DO	CHECKED			
SITE	37 Worcester Road, Rouse Hill, NSW	GEOLOGY	Ashfield Shale	VEGETATION	None		
EQUIPMENT	Excavator	EASTING		RL SURFACE	58 m	DATUM	AHD
EXCAVATION DIMENSIONS	ø100 mm x 1.10 m depth	NORTHING		ASPECT	South	SLOPE	<20%

Excavation					Sampling		Field Material Description						
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	L	Not Encountered		58.00	P4946/107/0.2/S/1 D 0.20 m <								

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TEST PIT**

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CLIENT	Sydney Anglican Schools Corporation			COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP108					
PROJECT	Engineering Services			LOGGED	DO	CHECKED		Sheet 1 OF 1					
SITE	37 Worcester Road, Rouse Hill, NSW			GEOLOGY	Ashfield Shale	VEGETATION	None	PROJECT NO. P1504946					
EQUIPMENT	Excavator			EASTING		RL SURFACE	66 m	DATUM	AHD				
EXCAVATION DIMENSIONS	ø100 mm x 1.20 m depth			NORTHING		ASPECT	South	SLOPE	<20%				
Excavation			Sampling		Field Material Description								
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
E	L	Not Encountered	66.00					ML	Clayey SILT, dark brown, fine gravels.				FILL
			0.2		P4946/108/0.10/S/1 D 0.10 m	X	X						
			0.30			X	X						
			65.70			X	X						
			0.4			X	X						
			0.60			X	X						
			65.40			X	X						
			0.8			X	X						
			0.80			X	X						
			65.20			X	X						
1.20													
1.4													
1.6													
1.8													
EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS													
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CLIENT	Sydney Anglican Schools Corporation	COMMENCED	15/08/2017	COMPLETED	15/08/2017	REF TP109 Sheet 1 OF 1 PROJECT NO. P1504946	
PROJECT	Engineering Services	LOGGED	DO	CHECKED			
SITE	37 Worcester Road, Rouse Hill, NSW	GEOLOGY	Ashfield Shale	VEGETATION	None		
EQUIPMENT	Excavator	EASTING		RL SURFACE	64 m	DATUM	AHD
EXCAVATION DIMENSIONS	ø100 mm x 1.00 m depth	NORTHING		ASPECT	South	SLOPE	<20%

Excavation				Sampling		Field Material Description								
METHOD	EXCAVATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS / ASCS CLASSIFICATION	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY	DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS	
HSA	L	Not Encountered		64.00				SIC	FILL: Silty CLAY, low plasticity, brown/grey, anthropogenic inclusions - (concrete, tile, brick).				FILL	
			0.2		P4946/109/0.10/S/1 D 0.10 m									
			0.30	63.70				SIC	Silty CLAY, low plasticity, dark brown.				RESIDUAL SOIL	
			0.4		P4946/109/0.40/S/1 D 0.40 m									
			0.6	63.40				CI	CLAY, medium plasticity, red, trace silt.					
			0.8		P4946/109/0.80/S/1 D 0.80 m									
			1.0	1.00						Hole Terminated at 1.00 m				
			1.2											
			1.4											
			1.6											
			1.8											

EXCAVATION LOG TO BE READ IN CONJUNCTION WITH ACCOMPANYING REPORT NOTES AND ABBREVIATIONS



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**Engineering Log -
TEST PIT**

Additional Testing									
Name		P1504946							
Martens Contact Officer		Daniel O'Sullivan		Contact Email		dosullivan@martens.com.au			
Sampling and Shipping		Sample Date		Dispatch Date		Turnaround Time			
		15 August 2017		16 August 2017		standard			
		Our Reference		Shipping Method (X)		Hand		Post	
On Ice (X)		X		No Ice (X)		Other (X)		Courier X	
Laboratory									
Name		EnviroLab							
Sample Delivery Address		12 Ashley Street, Chatswood							
Delivery Contact		Name		Aileen		Phone		9910 6200	
Please Send Report By (X)		Post		Fax		Email		X	
						Reporting Email Address		dosullivan@martens.com.au jfullton@martens.com.au	
						Fax		Email	
								chie@envirolabservices.com.au	

Sample ID	5b	OC/OP	8HM	BTEX	TRH	Asbestos in Material
4946/ SS101/0.1	X					
4946/ SS102/0.1	X					
4946/ SS103/0.1	X					
4946/ SS104/0.1		X	X			
4946/ SS105/0.1		X	X			
4946/ SS106/0.1		X	X			
4946/ SS107/0.1		X	X			
4946/ SS108/0.1		X	X			
4946/ TP101a/0.2	X					
4946/ TP101a/1.7	X					
4946/ TP107/0.2	X					
4946/ TP108/0.1	X					
4946/ TP108/0.5	X					
4946/ TP109/0.1	X					
4946/ TP109/0.5	X					
4946/MS101						X
Duplicate 1			X			
Duplicate 2			X			
Trip Spike				X		
Trip Blank					X	

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20


EnviroLAB
 12 Ashley St
 Chatswood NSW 2060
 Ph: (02) 9910 6200
 Job No: 175536
 Date Received: 16/8
 Time Received: 13.15
 Received by: DM
 Temp: Cool/Ambient
 Cooling: Ice pack
 Security: Intact/Broken/Nonr

Head Office
 Suite 201, Level 2, 20 George Street
 Hornsby NSW 2077, Australia
 > mail@martens.com.au
 > www.martens.com.au
 MARTENS & ASSOCIATES P/L

CERTIFICATE OF ANALYSIS 173536

Client Details

Client	Martens & Associates Pty Ltd
Attention	Daniel O'Sullivan
Address	Suite 201, 20 George St, Hornsby, NSW, 2077

Sample Details

Your Reference	<u>P1504946</u>
Number of Samples	1 Material, 19 Soils
Date samples received	16/08/2017
Date completed instructions received	16/08/2017

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	23/08/2017
Date of Issue	23/08/2017
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Asbestos Approved By

Analysed by Asbestos Approved Identifier: Lucy Zhu
 Authorised by Asbestos Approved Signatory: Lulu Scott

Results Approved By

Jeremy Faircloth, Organics Supervisor
 Long Pham, Team Leader, Metals
 Lulu Scott, Asbestos Supervisor
 Steven Luong, Chemist

Authorised By



David Springer, General Manager

vTRH(C6-C10)/BTEXN in Soil

Our Reference		173536-1	173536-2	173536-3	173536-9	173536-10
Your Reference	UNITS	4946/ SS101/0.1	4946/ SS102/0.1	4946/ SS103/0.1	4946/ TP101a/0.2	4946/ TP101a/1.7
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	126	118	130	125	114

vTRH(C6-C10)/BTEXN in Soil

Our Reference		173536-11	173536-12	173536-13	173536-14	173536-15
Your Reference	UNITS	4946/ TP107/0.2	4946/ TP108/0.1	4946/ TP108/0.5	4946/ TP109/0.1	4946/ TP109/0.5
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
TRH C ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRH C ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	130	124	118	121	110

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		173536-19	173536-20
Your Reference	UNITS	Trip Spike	Trip Blank
Date Sampled		15/08/2017	15/08/2017
Type of sample		Soil	Soil
Date extracted	-	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017
TRH C ₆ - C ₉	mg/kg	[NA]	<25
TRH C ₆ - C ₁₀	mg/kg	[NA]	<25
Benzene	mg/kg	97%	[NA]
Toluene	mg/kg	97%	[NA]
Ethylbenzene	mg/kg	98%	[NA]
m+p-xylene	mg/kg	98%	[NA]
o-Xylene	mg/kg	98%	[NA]
Surrogate aaa-Trifluorotoluene	%	106	139

svTRH (C10-C40) in Soil						
Our Reference		173536-1	173536-2	173536-3	173536-9	173536-10
Your Reference	UNITS	4946/ SS101/0.1	4946/ SS102/0.1	4946/ SS103/0.1	4946/ TP101a/0.2	4946/ TP101a/1.7
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	88	88	87	87	88

svTRH (C10-C40) in Soil						
Our Reference		173536-11	173536-12	173536-13	173536-14	173536-15
Your Reference	UNITS	4946/ TP107/0.2	4946/ TP108/0.1	4946/ TP108/0.5	4946/ TP109/0.1	4946/ TP109/0.5
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
TRH C ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH >C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50	<50	<50	<50
Surrogate o-Terphenyl	%	88	87	86	86	87

svTRH (C10-C40) in Soil		
Our Reference		173536-20
Your Reference	UNITS	Trip Blank
Date Sampled		15/08/2017
Type of sample		Soil
Date extracted	-	17/08/2017
Date analysed	-	18/08/2017
TRH C ₁₀ - C ₁₄	mg/kg	<50
TRH C ₁₅ - C ₂₈	mg/kg	<100
TRH C ₂₉ - C ₃₆	mg/kg	<100
TRH >C ₁₀ -C ₁₆	mg/kg	<50
TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50
TRH >C ₁₆ -C ₃₄	mg/kg	<100
TRH >C ₃₄ -C ₄₀	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	92

PAHs in Soil						
Our Reference		173536-1	173536-2	173536-3	173536-9	173536-10
Your Reference	UNITS	4946/ SS101/0.1	4946/ SS102/0.1	4946/ SS103/0.1	4946/ TP101a/0.2	4946/ TP101a/1.7
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.6	0.4
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	1.3	0.8
Pyrene	mg/kg	<0.1	<0.1	<0.1	1.2	0.8
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.4	0.2
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.5	0.4
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	1	0.7
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.86	0.4
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.5	0.2
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	0.8	0.4
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	1.1	0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	1.1	0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	1.1	0.5
Total +ve PAH's	mg/kg	<0.05	<0.05	<0.05	7.6	4.3
Surrogate <i>p</i> -Terphenyl-d14	%	80	82	81	81	81

PAHs in Soil						
Our Reference		173536-11	173536-12	173536-13	173536-14	173536-15
Your Reference	UNITS	4946/ TP107/0.2	4946/ TP108/0.1	4946/ TP108/0.5	4946/ TP109/0.1	4946/ TP109/0.5
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.06	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total +ve PAH's	mg/kg	0.3	<0.05	<0.05	<0.05	<0.05
Surrogate p-Terphenyl-d14	%	85	79	84	85	81

Organochlorine Pesticides in soil						
Our Reference		173536-1	173536-2	173536-3	173536-4	173536-5
Your Reference	UNITS	4946/ SS101/0.1	4946/ SS102/0.1	4946/ SS103/0.1	4946/ SS104/0.1	4946/ SS105/0.1
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	17/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	88	96	83	82

Organochlorine Pesticides in soil

Our Reference		173536-6	173536-7	173536-8	173536-9	173536-10
Your Reference	UNITS	4946/ SS106/0.1	4946/ SS107/0.1	4946/ SS108/0.1	4946/ TP101a/0.2	4946/ TP101a/1.7
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	0.1	<0.1	0.4	<0.1	<0.1
alpha-chlordane	mg/kg	0.1	<0.1	0.4	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	0.3	<0.1	<0.1
Surrogate TCMX	%	82	86	88	88	85

Organochlorine Pesticides in soil

Our Reference		173536-11	173536-12	173536-13	173536-14	173536-15
Your Reference	UNITS	4946/ TP107/0.2	4946/ TP108/0.1	4946/ TP108/0.5	4946/ TP109/0.1	4946/ TP109/0.5
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	85	87	86	85

Organophosphorus Pesticides

Our Reference		173536-1	173536-2	173536-3	173536-4	173536-5
Your Reference	UNITS	4946/ SS101/0.1	4946/ SS102/0.1	4946/ SS103/0.1	4946/ SS104/0.1	4946/ SS105/0.1
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	17/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	91	88	96	83	82

Organophosphorus Pesticides

Our Reference		173536-6	173536-7	173536-8	173536-9	173536-10
Your Reference	UNITS	4946/ SS106/0.1	4946/ SS107/0.1	4946/ SS108/0.1	4946/ TP101a/0.2	4946/ TP101a/1.7
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	82	86	88	88	85

Organophosphorus Pesticides

Our Reference		173536-11	173536-12	173536-13	173536-14	173536-15
Your Reference	UNITS	4946/ TP107/0.2	4946/ TP108/0.1	4946/ TP108/0.5	4946/ TP109/0.1	4946/ TP109/0.5
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
Azinphos-methyl (Guthion)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorvos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Malathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Parathion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	86	85	87	86	85

Acid Extractable metals in soil

Our Reference		173536-1	173536-2	173536-3	173536-4	173536-5
Your Reference	UNITS	4946/ SS101/0.1	4946/ SS102/0.1	4946/ SS103/0.1	4946/ SS104/0.1	4946/ SS105/0.1
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Arsenic	mg/kg	6	5	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	9	14	10	7	6
Copper	mg/kg	17	23	16	12	8
Lead	mg/kg	18	41	18	41	23
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	8	7	5	7
Zinc	mg/kg	70	82	33	100	63

Acid Extractable metals in soil

Our Reference		173536-6	173536-7	173536-8	173536-9	173536-10
Your Reference	UNITS	4946/ SS106/0.1	4946/ SS107/0.1	4946/ SS108/0.1	4946/ TP101a/0.2	4946/ TP101a/1.7
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	8	9	9	10	11
Copper	mg/kg	19	16	16	15	18
Lead	mg/kg	16	22	23	17	21
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	6	6	5	6
Zinc	mg/kg	58	54	110	18	19

Acid Extractable metals in soil

Our Reference		173536-11	173536-12	173536-13	173536-14	173536-15
Your Reference	UNITS	4946/ TP107/0.2	4946/ TP108/0.1	4946/ TP108/0.5	4946/ TP109/0.1	4946/ TP109/0.5
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Arsenic	mg/kg	<4	4	<4	5	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	11	5	13	9
Copper	mg/kg	31	13	13	16	12
Lead	mg/kg	17	19	9	24	17
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	15	8	3	9	8
Zinc	mg/kg	65	36	21	48	25

Acid Extractable metals in soil

Our Reference		173536-17	173536-18
Your Reference	UNITS	Duplicate 1	Duplicate 2
Date Sampled		15/08/2017	15/08/2017
Type of sample		Soil	Soil
Date prepared	-	17/08/2017	17/08/2017
Date analysed	-	17/08/2017	17/08/2017
Arsenic	mg/kg	5	5
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	9	13
Copper	mg/kg	14	16
Lead	mg/kg	17	22
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	11	9
Zinc	mg/kg	71	42

Moisture						
Our Reference		173536-1	173536-2	173536-3	173536-4	173536-5
Your Reference	UNITS	4946/ SS101/0.1	4946/ SS102/0.1	4946/ SS103/0.1	4946/ SS104/0.1	4946/ SS105/0.1
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
Moisture	%	13	15	13	5.5	12

Moisture						
Our Reference		173536-6	173536-7	173536-8	173536-9	173536-10
Your Reference	UNITS	4946/ SS106/0.1	4946/ SS107/0.1	4946/ SS108/0.1	4946/ TP101a/0.2	4946/ TP101a/1.7
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
Moisture	%	12	9.4	6.8	14	14

Moisture						
Our Reference		173536-11	173536-12	173536-13	173536-14	173536-15
Your Reference	UNITS	4946/ TP107/0.2	4946/ TP108/0.1	4946/ TP108/0.5	4946/ TP109/0.1	4946/ TP109/0.5
Date Sampled		15/08/2017	15/08/2017	15/08/2017	15/08/2017	15/08/2017
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	17/08/2017	17/08/2017	17/08/2017	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017	18/08/2017	18/08/2017	18/08/2017
Moisture	%	7.7	17	13	17	15

Moisture			
Our Reference		173536-17	173536-18
Your Reference	UNITS	Duplicate 1	Duplicate 2
Date Sampled		15/08/2017	15/08/2017
Type of sample		Soil	Soil
Date prepared	-	17/08/2017	17/08/2017
Date analysed	-	18/08/2017	18/08/2017
Moisture	%	12	15

Asbestos ID - materials		
Our Reference	UNITS	173536-16
Your Reference		4946/MS101
Date Sampled		15/08/2017
Type of sample		Material
Date analysed	-	23/08/2017
Mass / Dimension of Sample	-	100x75x10mm
Sample Description	-	Grey compressed fibre cement material
Asbestos ID in materials	-	Chrysotile asbestos detected Amosite asbestos detected Crocidolite asbestos detected

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	173536-2
Date extracted	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	17/08/2017
Date analysed	-			18/08/2017	1	18/08/2017	18/08/2017		18/08/2017	18/08/2017
TRH C ₆ - C ₉	mg/kg	25	Org-016	<25	1	<25	<25	0	120	115
TRH C ₆ - C ₁₀	mg/kg	25	Org-016	<25	1	<25	<25	0	120	115
Benzene	mg/kg	0.2	Org-016	<0.2	1	<0.2	<0.2	0	118	113
Toluene	mg/kg	0.5	Org-016	<0.5	1	<0.5	<0.5	0	125	120
Ethylbenzene	mg/kg	1	Org-016	<1	1	<1	<1	0	115	110
m+p-xylene	mg/kg	2	Org-016	<2	1	<2	<2	0	120	115
o-Xylene	mg/kg	1	Org-016	<1	1	<1	<1	0	118	113
naphthalene	mg/kg	1	Org-014	<1	1	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	129	1	126	128	2	130	122

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	17/08/2017	17/08/2017		[NT]	[NT]
Date analysed	-			[NT]	11	18/08/2017	18/08/2017		[NT]	[NT]
TRH C ₆ - C ₉	mg/kg	25	Org-016	[NT]	11	<25	<25	0	[NT]	[NT]
TRH C ₆ - C ₁₀	mg/kg	25	Org-016	[NT]	11	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-016	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-016	[NT]	11	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-016	[NT]	11	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-016	[NT]	11	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-016	[NT]	11	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-014	[NT]	11	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	[NT]	11	130	132	2	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	173536-2
Date extracted	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	17/08/2017
Date analysed	-			18/08/2017	1	18/08/2017	18/08/2017		18/08/2017	18/08/2017
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	1	<50	<50	0	112	102
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	1	<100	<100	0	116	103
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	1	<100	<100	0	106	86
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	1	<50	<50	0	112	102
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	1	<100	<100	0	116	103
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	1	<100	<100	0	106	86
Surrogate o-Terphenyl	%		Org-003	90	1	88	86	2	109	88

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	17/08/2017	17/08/2017		[NT]	[NT]
Date analysed	-			[NT]	11	18/08/2017	18/08/2017		[NT]	[NT]
TRH C ₁₀ - C ₁₄	mg/kg	50	Org-003	[NT]	11	<50	<50	0	[NT]	[NT]
TRH C ₁₅ - C ₂₈	mg/kg	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH C ₂₉ - C ₃₆	mg/kg	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH >C ₁₀ -C ₁₆	mg/kg	50	Org-003	[NT]	11	<50	<50	0	[NT]	[NT]
TRH >C ₁₆ -C ₃₄	mg/kg	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
TRH >C ₃₄ -C ₄₀	mg/kg	100	Org-003	[NT]	11	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-003	[NT]	11	88	89	1	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	173536-2
Date extracted	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	17/08/2017
Date analysed	-			18/08/2017	1	18/08/2017	18/08/2017		18/08/2017	18/08/2017
Naphthalene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	84	83
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	101	93
Phenanthrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	102	98
Anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	95	90
Pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	95	90
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	107	100
Benzo(b,j,k)fluoranthene	mg/kg	0.2	Org-012	<0.2	1	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	1	<0.05	<0.05	0	87	86
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	86	1	80	81	1	127	107

QUALITY CONTROL: PAHs in Soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	17/08/2017	17/08/2017		[NT]	[NT]
Date analysed	-			[NT]	11	18/08/2017	18/08/2017		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-012	[NT]	11	0.1	<0.1	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012	[NT]	11	0.1	<0.1	0	[NT]	[NT]
Benzo(b,j,k)fluoranthene	mg/kg	0.2	Org-012	[NT]	11	<0.2	<0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012	[NT]	11	0.06	<0.05	18	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012	[NT]	11	85	82	4	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	173536-2
Date extracted	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	17/08/2017
Date analysed	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	18/08/2017
HCB	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	83	75
gamma-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	96	90
Heptachlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	89	86
delta-BHC	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	93	87
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	88	83
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	93	90
Dieldrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	97	89
Endrin	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	86	78
pp-DDD	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	92	88
Endosulfan II	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	79	83
Methoxychlor	mg/kg	0.1	Org-005	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	106	1	91	100	9	128	107

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	17/08/2017	17/08/2017		[NT]	[NT]
Date analysed	-			[NT]	11	18/08/2017	18/08/2017		[NT]	[NT]
HCB	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-005	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-005	[NT]	11	86	86	0	[NT]	[NT]

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	173536-2
Date extracted	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	17/08/2017
Date analysed	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	18/08/2017
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	100	105
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	85	97
Dimethoate	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	105	104
Fenitrothion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	106	108
Malathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	78	83
Parathion	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	102	113
Ronnel	mg/kg	0.1	Org-008	<0.1	1	<0.1	<0.1	0	110	111
Surrogate TCMX	%		Org-008	106	1	91	100	9	90	88

QUALITY CONTROL: Organophosphorus Pesticides					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	11	17/08/2017	17/08/2017		[NT]	[NT]
Date analysed	-			[NT]	11	18/08/2017	18/08/2017		[NT]	[NT]
Azinphos-methyl (Guthion)	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Bromophos-ethyl	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Diazinon	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dichlorvos	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Dimethoate	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ethion	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Fenitrothion	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Malathion	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Parathion	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Ronnel	mg/kg	0.1	Org-008	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-008	[NT]	11	86	86	0	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	173536-2
Date prepared	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	17/08/2017
Date analysed	-			17/08/2017	1	17/08/2017	17/08/2017		17/08/2017	17/08/2017
Arsenic	mg/kg	4	Metals-020	<4	1	6	5	18	100	76
Cadmium	mg/kg	0.4	Metals-020	<0.4	1	<0.4	<0.4	0	87	79
Chromium	mg/kg	1	Metals-020	<1	1	9	9	0	95	91
Copper	mg/kg	1	Metals-020	<1	1	17	16	6	108	107
Lead	mg/kg	1	Metals-020	<1	1	18	17	6	106	97
Mercury	mg/kg	0.1	Metals-021	<0.1	1	<0.1	<0.1	0	108	104
Nickel	mg/kg	1	Metals-020	<1	1	12	14	15	108	99
Zinc	mg/kg	1	Metals-020	<1	1	70	79	12	100	104

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate			Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	11	17/08/2017	17/08/2017		[NT]	[NT]
Date analysed	-			[NT]	11	17/08/2017	17/08/2017		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	11	<4	4	0	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	11	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	11	7	8	13	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	11	31	31	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	11	17	18	6	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	11	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	11	15	17	12	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	11	65	50	26	[NT]	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

Aileen Hie

From: Daniel O'Sullivan <dosullivan@martens.com.au>
Sent: Thursday, 31 August 2017 10:50 AM
To: Nancy Zhang
Cc: Jeffrey Fulton; SydneyMailbox
Subject: RE: Results for Registration 173536 P1504946

Hi Nancy,

Can we get the following testing done on 2 day TAT.

4946/ TP101a/0.2 – tested for benzo(a)pyrene in TCLP.

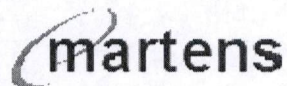
Please let me know if there are any issues.

Daniel O'Sullivan | Environmental Engineer

B.Eng (Civil/Environmental)

T 02 9476 9944 | M 0401006905 | F 02 9476 8767 | W www.martens.com.au

Suite 201, 20 George Street, Hornsby, NSW 2077



civil | water | geotechnical | environment | projects

Martens & Associates Pty Ltd

This message is intended for the addressee named and may contain confidential / privileged information. If you are not the intended recipient, please delete it and notify the sender. Views expressed in this message are those of the individual sender, and are not necessarily the views of Martens & Associates Pty Ltd. You should scan any attached files for viruses.



Please consider the environment before printing this email.

From: Nancy Zhang [<mailto:NZhang@envirolab.com.au>]
Sent: Wednesday, 23 August 2017 4:59 PM
To: Lara Tintinger; Jeffrey Fulton; Daniel O'Sullivan
Subject: Results for Registration 173536 P1504946

Please refer to attached for:

a copy of the Certificate of Analysis

a copy of the COC/paperwork received from you
ESDAT Extracts

an Excel or .csv file containing the results

a copy of the Invoice

Please note that a hard copy will not be posted.

Enquiries should be made directly to:
customerservice@envirolab.com.au

Regards

173536-A
Due: 4/9/17
2 day TAT

CERTIFICATE OF ANALYSIS 173536-A

Client Details

Client	Martens & Associates Pty Ltd
Attention	Daniel O'Sullivan
Address	Suite 201, 20 George St, Hornsby, NSW, 2077

Sample Details

Your Reference	<u>P1504946</u>
Number of Samples	Additional Testing
Date samples received	16/08/2017
Date completed instructions received	31/08/2017

Analysis Details

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

Report Details

Date results requested by	04/09/2017
Date of Issue	01/09/2017
NATA Accreditation Number 2901. This document shall not be reproduced except in full.	
Accredited for compliance with ISO/IEC 17025 - Testing. Tests not covered by NATA are denoted with *	

Report Comments

PAHs in TCLP USEPA 1311 - The instructions were received outside of the recommended Technical Holding Time (THT), however, the analysis has proceeded as requested.

Results Approved By

Jeremy Faircloth, Organics Supervisor

Authorised By



David Springer, General Manager

PAHs in TCLP (USEPA 1311)		
Our Reference	UNITS	173536-A-9
Your Reference		4946/ TP101a/0.2
Date Sampled		15/08/2017
Type of sample		Soil
pH of soil for fluid# determ.	pH units	8.1
pH of soil TCLP (after HCl)	pH units	1.4
Extraction fluid used	-	1
pH of final Leachate	pH units	4.9
Date extracted	-	01/09/2017
Date analysed	-	01/09/2017
Benzo(a)pyrene in TCLP	mg/L	<0.001
Surrogate <i>p</i> -Terphenyl-d14	%	100

Method ID	Methodology Summary
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP) using Zero Headspace Extraction (zHE) using AS4439 and USEPA 1311.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using in house method INORG-004.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-012	Leachates are extracted with Dichloromethane and analysed by GC-MS.

QUALITY CONTROL: PAHs in TCLP (USEPA 1311)						Duplicate		Spike Recovery %		
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-W1	[NT]
Date extracted	-			01/09/2017	[NT]	[NT]	[NT]	[NT]	01/09/2017	[NT]
Date analysed	-			01/09/2017	[NT]	[NT]	[NT]	[NT]	01/09/2017	[NT]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-012	<0.001	[NT]	[NT]	[NT]	[NT]	93	[NT]
Surrogate <i>p</i> -Terphenyl-d14	%		Org-012	127	[NT]	[NT]	[NT]	[NT]	99	[NT]

Result Definitions

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PQL	Practical Quantitation Limit
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>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
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Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
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LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.
Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.	

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.