GEOTECHNICAL INVESTIGATION

FOR

COLUMBIA LANE DEVELOPMENT PTY LIMITED

11 – 17 Columbia Lane, Homebush, New South Wales

Report No: 19/0962

Project No: 21024/1803D-G

April 2019

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Table of Contents

1. INTRODUCTION 2
2. NATURE OF THE INVESTIGATION 3
2.1. Fieldwork 3
2.2. Laboratory Testing 4
3. GEOLOGY AND SITE CONDITIONS 4
4. SUBSURFACE CONDITIONS 4
5. DISCUSSION 6
5.1. Site Classification to AS2870 6
5.2. Excavation Conditions and Support 7
5.3. Foundation Design 10
5.4. Soil Aggressiveness 11
6. FINAL COMMENTS 12

DRAWING NO. 19/0962 – BOREHOLE, TEST PIT AND PENETROMETER LOCATIONS

NOTES RELATING TO GEOTECHNICAL REPORTS

APPENDIX A – BOREHOLE LOGS, TEST PIT LOGS, CORE PHOTOS, POINT LOAD TEST RESULTS AND EXPLANATION SHEETS

APPENDIX B – LABORATORY TEST RESULTS

1. INTRODUCTION

This report presents the results of a geotechnical investigation carried out by STS GeoEnvironmental Pty Limited (STS) for a proposed new residential development to be constructed at 11 – 17 Columbia Lane, Homebush. We have been informed the development comprises construction of up to twenty-one (21) above ground levels, and up to three (3) levels of basement car parking. The lower basement level is located at RL-2.5m. Construction of the basement will require excavating to depths of between 7.5 and 10.5 metres below existing ground surface levels.

The purpose of the investigation was to:

- assess the subsurface conditions over the site,
- provide a site classification to AS2870,
- provide recommendations regarding the appropriate foundation system for the site including design parameters,
- provide parameters for the temporary and permanent support of the excavation,
- provide recommendations regarding vibration control during rock excavation, and
- comment on soil aggressiveness to buried steel and concrete.

The investigation was undertaken at the request of Columbia Lane Developments Pty Limited.

Our scope of works included a Preliminary Contamination Assessment (PSI) and Detailed Contamination Assessment (DSI) of the site. The results of the PSI & DSI will be reported separately.

2. NATURE OF THE INVESTIGATION

2.1. Fieldwork

The fieldwork was undertaken in two phases, these are:

Phase 1 – July 2016:

The geotechnical fieldwork consisted of drilling eight (8) boreholes numbered BH1 to BH8, inclusive, at the locations shown on Drawing No. 19/0962. The borehole locations were nominated by the client. All boreholes were drilled using a truck mounted Hydropower Scout drilling rig owned and operated by Terratest. Soils and weathered rock were drilled using rotary solid flight augers until at least very low strength bedrock was encountered. Soils strengths were determined by undertaking Standard Penetration Tests (SPT') at regular intervals in the boreholes. The boreholes were extended into the underlying bedrock using NMLC sized diamond coring equipment to target depths. The recovered rock core was logged, boxed and photographed. In order to assist in assessing rock strength, the recovered rock core was Point Load Index tested at a nominal spacing of 1 metre. In order to measure the groundwater levels, PVC standpipe piezometers were installed in BH1, BH2, BH4 and BH7.

Drilling operations were directed by one of STS's senior geologists who also logged the subsurface conditions encountered.

Phase 2 – April 2019:

The geotechnical fieldwork consisted of the excavation of four (4) deep test pits numbered TP1 to TP4, inclusive, at the locations shown on Drawing No. 19/0962. The test pits were excavated to practical refusal using a 20 tonne excavator fitted with a toothed bucket attachment, supplied and operated by Milos Earthmoving. Photographs of the test pit excavations are attached.

Fieldwork operations were supervised by one of STS's technical officers who also logged the subsurface conditions encountered.

The subsurface conditions observed are recorded on the borehole and test pit logs together with photographs test pits and recovered core samples. The results of the Point Load testing given in Appendix A. An explanation of the terms used on the logs is also given in Appendix A. Notes relating to geotechnical reports are also attached.

2.2. Laboratory Testing

In order to assess the soils for their aggressiveness selected representative soil samples were tested to determine the following:

- pH,
- sulphate (SO_4) and
- chloride content (Cl)

The detailed test reports are given in Appendix B.

3. GEOLOGY AND SITE CONDITIONS

The Sydney geological series sheet at a scale of 1:100,000 shows Triassic Age Ashfield Shale of the Wianamatta Group underlies the site. Rocks within this formation comprise shale, claystone and laminite.

The site is located on the western side of Columbia Lane. The site is roughly trapezoidal in shape with a combined area of approximately 6,548m^2. At the time of the fieldwork, the site was being demolished. All structures had been removed, however a series of concrete hardstands remained on the site tother with a small brick substation in the north east corner of the site. Site vegetation comprised trees along the southern and western boundaries.

The ground surface falls approximately 2 metres to the north west from RL6.7m to RL4.7m

To the east of the site is Columbia Lane, to the north of the site is an access lane, beyond which is a recently constructed multi-level unit development with basement car parking. To the south and west of the site is a concrete lined stormwater channel. The base of the channel is approximately 3 metres lower than the subject site.

4. SUBSURFACE CONDITIONS

When assessing the subsurface conditions across a site from a limited number of boreholes there is the possibility that variations may occur between test locations. The data derived from the site investigation programme are extrapolated across the site to form a geological model and an engineering opinion is rendered about overall subsurface conditions and their likely behaviour regarding the proposed development. The actual conditions at the site may differ from those inferred, since no subsurface exploration programme, no matter how comprehensive, can reveal all subsurface details and anomalies.

The subsurface conditions generally consist of concrete, asphalt and fill overlying silty clays, sandy silty clays, silty sandy clays, gravelly silty clays, silty gravelly clays, sandy clays and weathered shale. Concrete hardstands were cored in the north east corner of the site with thicknesses of 100 to 340mm. Fill materials were encountered across the site to depths of 0.3 to 1.7 metres. Natural s silty clays, sandy silty clays, silty sandy clays, gravelly silty clays, silty gravelly clays and sandy clays were encountered below the fill to depths of 4.0 to 6.6 metres. The consistency of the clays varies between soft and hard. Weathered shale underlies the site. Table 4.1 below outlines the depth to each rock class as encountered in the boreholes.

Table 4.1 – Rock Class Summary

BH ID	Depth of Class V (m)	Depth of Class IV (m)	Depth of Class III (m)
BH1	5.5 – 6.1	-	6.1 – 12.9
BH2	5.7 – 6.8	-	6.8 – 12.8
BH3	4.0 – 6.2	-	6.2 – 13.0
BH4	5.0 – 5.5	5.5 – 7.0	7.0 – 11.9
BH5	6.6 – 7.0	7.0 – 9.5 & 11.2 – 12.0	9.5 – 11.2 & 12.0 – 13.0
BH6	6.2 – 6.4	-	6.4 – 12.9
BH7	4.2 – 6.0	6.0 – 7.0	7.0 – 13.3
BH8	6.1 – 6.6	-	6.6 – 12.9

Groundwater seepage was during auger drilling in some of the boreholes and within the test pit excavations. The piezometers installed in BH1, BH2, BH4 and BH7 were bailed of drilling water on completion of drilling. The water recorded both during drilling at during the groundwater monitoring period in the boreholes are summarised in Table 4.2 below. Table 4.3 provides a summary of the groundwater observations in the test pits.

Table 4.2 – Groundwater Summary - Boreholes

BH ID	Water Level During Auger Drilling (m)	Reading Undertaken 19/7/2016 (m)
BH1	Not Encountered	3.5
BH2	3.2 – 4/7/2016	2.7
BH3	Not Encountered	Piezometer Not Installed
BH4	Not Encountered	3.7
BH5	Not Encountered	Piezometer Not Installed
BH6	2.2 – 7/7/2016	Piezometer Not Installed
BH7	Not Encountered	5.1
BH8	Not Encountered	Piezometer Not Installed

Table 4.3 – Groundwater Summary – Test Pits

TP ID	Seepage Depth (m)	Seepage Rate
TP1	2.6	Low
	3.6	Low
TP2	4.7	Low
TP3	3.2	Low
TP4*	Not Encountered	N/A

Seepage was observed at the fill/natural interface in TP4, however, the seepage is likely due to a perched localised water table and not groundwater.

5. DISCUSSION

5.1. Site Classification to AS2870

The classification has been prepared in accordance with the guidelines set out in the "Residential Slabs and Footings" Code, AS2870 – 2011.

Because there are concrete hardstands and pavements present, abnormal moisture conditions (AMC) prevail at the site (Refer to Section 1.3.3 of AS2870).

Because of the AMC and due to the presence of deep fill, the site is classified *a problem site (P).*

5.2. Excavation Conditions and Support

Based on the subsurface conditions observed in the boreholes, the basement excavation is likely to encounter concrete, fill, alluvial and residuals clays and weathered shale. Excavators without assistance should be able to remove the soils and some of the weathered shale. Excavators alone without assistance will probably not be able to remove any significant amount of the Class IV rock as shown in Table 4.1. Hydraulic breakers mounted on an excavator or jack hammers will be required to break up the majority of the rock below these depths before it can be removed using an excavator.

Particular care will be required to ensure that buildings or other developments on adjacent properties are not damaged when excavating the rock. The structures on the adjacent property to the north are founded directly on the shale. Buildings founded directly on rock can often be very susceptible to damage from vibrations and rendered buildings will be very susceptible to ground borne vibrations. Consideration should also be given to be vulnerability to ground borne vibrations to the exiting concrete stormwater channel to the south and west.

Excavations methods should be adopted which limit ground vibrations at the adjoining developments to not more than 10 mm/sec. Vibration monitoring will be required to verify that this is achieved. However, if the contractor adopts methods and/or equipment in accordance with the recommendations in Table 5.1 for a ground vibration limit of 5 mm/sec, vibration monitoring may not be required.

The limits of 5 mm/sec and 10 mm/sec are expected to be achievable if rock breaker equipment or other excavation methods are restricted as indicated in Table 5.1.

At all times, the excavation equipment must be operated by experienced personnel, according to the manufacturer's instructions and in a manner consistent with minimising vibration effects.

Use of other techniques (e.g. grinding, rock sawing), although less productive, would reduce or possibly eliminate risks of damage to property through vibration effects transmitted via the ground. Such techniques may be considered if an alternative to rock breaking is required.

Table 5.1 – Recommendations for Rock Breaking Equipment

Distance from adjoining structure (m)	Maximum Peak Particle Velocity 5 mm/sec		Maximum Peak Particle Velocity 10 mm/sec	
	Equipment	Operating Limit (% of Maximum Capacity)	Equipment	Operating Limit (% of Maximum Capacity)
1.5 to 2.5	Hand operated jackhammer only	100	300 kg rock hammer	50
2.5 to 5.0	300 kg rock hammer	50	300 kg rock hammer or 600 kg rock hammer	100 50
5.0 to 10.0	300 kg rock hammer or 600 kg rock hammer	100 50	600 kg rock hammer or 900 kg rock hammer	100 50

*Vibration monitoring is recommended for 10 mm/sec vibration limit.

If rock sawing is carried out around excavation boundaries in not less than 1 metre deep lifts, a 900 kg rock hammer could be used at up to 100% maximum operating capacity with an assessed peak particle velocity not exceeding 5 mm/sec, subject to observation and confirmation by a geotechnical engineer at the commencement of excavation.

It should be noted that vibrations that are below threshold levels for building damage may be experienced at adjoining developments.

Saw cutting should be carried out before any rock breaking is commenced on the site. It would be appropriate before commencing excavation to undertake a dilapidation survey of any adjacent structures that may potentially be damaged. This will provide a reasonable basis for assessing any future claims of damage.

It is of course important that the onsite excavations are adequately supported at all times and do not endanger the adjacent properties.

Temporary slopes in soils and weathered rock may be constructed at a maximum angle of 1 to 1. Where this is not possible it will be necessary to provide temporary support. Support will probably need to be drilled and fixed into the rock below the base of the excavation.

The depth of penetration should be a minimum of 1.0 metre. Reinforced concrete solider piles with shotcrete infill panels are likely to be the most cost-effective method of temporary support. The spacing of the piles should be specified by a structural engineer based on the design parameters given below.

When considering the design of the supports, it will be necessary to allow for the loading from structures in adjoining properties, any ground surface slope and the water table present. Where the structures in adjoining properties are within the zone of influence of the excavation, it will be necessary to adopt K_o conditions when designing the temporary support (this may apply to the concrete lined stormwater channel). Anchors or props can be used to provide the required support. If anchors extend into adjoining property, it will be necessary to obtain the permission of the property owners. Anchors should be installed into the weathered rock. When props or anchors are used for support, a rectangular earth pressure distribution should be adopted on the active side of the support. K_o should also be used to design the permanent support. The presence of the existing basement to the north should be considered when designing temporary and permanent support.

The following parameters are suggested for the design of the retaining wall system where there is a level ground surface:

Soil and Weathered Shale (Class V):

Active Earth Pressure Coefficient (K_a) = 0.4

At Rest Pressure Coefficient (K_o) = 0.55

Total (Bulk) Density = 20 kN/m^3

Weathered Shale (Class IV/III):

Earth Pressure Coefficient = 0.1 or 10 kPa (whichever is lesser)

Passive Earth Pressure Coefficient (K_p) = 4.5 (shale only)

Total (Bulk) Density = 22 kN/m^3

Based on the observations in the boreholes, test pits and piezometers, the proposed basement excavation will intercept groundwater. This has implications for the development both during construction and in the longer term.

Based on the results of the test pits undertaken in April 2019, we expect the groundwater inflow rate to be low. The volume of seepage should be controllable during construction using temporary sumps and pumps.

As discussed above, the most cost-effective method of temporary support will most likely be solider piles with shotcrete infill panels. The groundwater seepage is expected to occur between 2.5 and 4 meters depth, it is therefore imperative that adequate drainage be installed behind the shotcrete panels as the excavation progresses. Some minor peeling of the test pit sidewalls was observed at the level of groundwater seepage, it is therefore recommended that the shotcrete panels be progressively installed as the excavation progresses in lifts not exceeding 2.5 metres vertical thickness.

Waterproofing the basement below the water table will be required. In the long term a sump and pump will be required to remove any seepage into the basement.

In order to minimise uplift pressure on the basement slab a gravel drainage layer is to be provide. This drainage layer should be incorporate pipes connected to the sump. If this is done, a nominal head of 1 metre of water should be used when determining the uplift pressure on the basement slab.

5.3. Foundation Design

The existing fill materials and soft/firm clays are not considered suitable for foundation support. Footings that bear in the firm to stiff natural clayey soils at a high level may be proportioned using an allowable bearing pressure of 100 kPa. This value may be increased to 150 kPa and 300 kPa when founding in the stiff and very stiff materials, respectively.

After the basement excavation has been completed the exposed material will likely comprise medium to high strength Class III weathered shale. Table 5.2 below provides bearing pressures for the various rock classes encountered.

Table 5.2 – Allowable Bearing Pressures for Shale

Rock Classification	Allowable End Bearing (kPa)	Allowable Adhesion (kPa)
Shale Class V	700	70
Shale Class IV	1500	150
Shale Class III	3500	350

The recovered rock core in BH5 was highly jointed / fractured over the majority of the borehole. If Class III bearing pressures are adopted, it is recommended that proof cores and spoon testing be undertaken in the base of any pad footings in the vicinity of BH5 to ensure the recommended bearing pressures have been achieved.

When piles are founded in rock the adhesion in the overlying soils must be ignored. In order to ensure the bearing values given can be achieved, care should be taken to ensure that the base of excavations are free of all loose material prior to concreting. It is recommended that all footing excavations be protected with a layer of blinding concrete as soon as possible, preferably immediately after excavating, cleaning, inspection and approval. The possible presence of groundwater needs to be considered when drilling piers and pouring concrete.

5.4. Soil Aggressiveness

The aggressiveness or erosion potential of an environment in building materials, particularly concrete and steel is dependent on the levels of soil pH and the types of salts present, generally sulphates and chlorides. In order to determine the degree of aggressiveness, the test values obtained are compared to Tables 6.4.2 (C) and 6.5.2 (C) in AS2159 – 2009 Piling – Design and Installation. The test results are summarised in the table below.

Table 5.3 – Soil Aggressiveness Summary Table

Sample No.	Location	Depth (m)	pH	Chloride (mg/kg)	Sulfate (mg/kg)
S4	BH1	1.7	5.3	40	120
S19	BH4	4.1	8.8	60	70
S27	BH6	5.6	7.8	140	180
S33	BH8	5.2	8.1	1250	350
S56	BH13	3.0	7.0	<10	110
S58	BH11	3.0	7.0	250	70
S60	BH12	3.0	7.8	320	250
S65	BH14	3.0	7.8	<10	30

The report results range between:

- pH - 5.3 to 8.8
- soluble SO_4 - 30 to 350 mg/kg (ppm)
- soluble chloride - <10 to 1250 mg/kg (ppm)

The soils on the site consist of low permeability silty clays. Therefore, the soil conditions B are considered appropriate.

A review of the durability aspects indicates that:

- pH : minimum value of 5.3
- SO_4 : maximum value of 350 mg/kg (ppm) < 5000 ppm
- CL : maximum value of 1250 mg/kg (ppm) < 5000 ppm

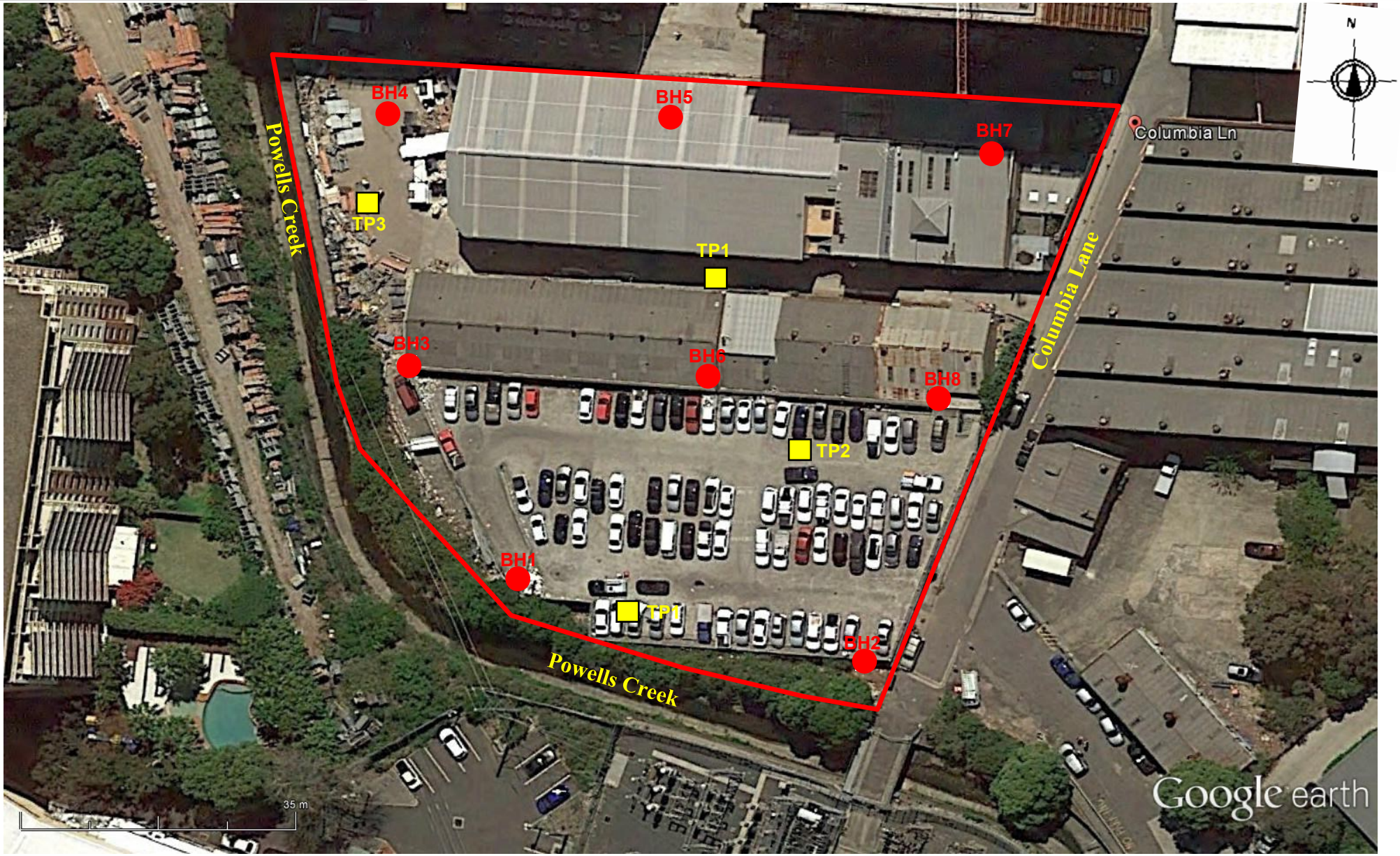
The exposure classification for the onsite soils is non-aggressive for steel and mildly aggressive for concrete.

6. FINAL COMMENTS

During construction, should the subsurface conditions vary from those inferred above, we would be contacted to determine if any changes should be made to our recommendations.

The exposed bearing surfaces for footings should be inspected by a geotechnical engineer to ensure the allowable pressure given has been achieved.

Matt Green
Senior Engineering Geologist



Site Boundary

Borehole Locations (BH1 to BH8)

Test Pit Locations (TP1 to TP4)

STS GEOENVIRONMENTAL PTY LTD	Scale: as shown	Date: April 2019
CLIENT: COLUMBIA LANE DEVELOPMENT PTY LTD		
FURTHER GEOTECHNICAL INVESTIGATION 11-17 COLUMBIA LANE, HOMEBUSH BOREHOLE AND TEST PIT LOCATIONS	Project No. 21024/1803D-G	
	Drawing No: 19/0962	

APPENDIX A – BOREHOLE LOGS, TEST PIT LOGS, CORE PHOTOS, POINT LOAD TEST RESULTS AND EXPLANATION SHEETS

STS GeoEnvironmental Pty Ltd

ENGINEERING EXCAVATION LOG - TEST PIT

Client: Columbia Lane Development Pty Limited	Project No.: 21024/1803D-G	**TEST PIT NO.: TP 1**
Project: 11-17 Columbia Lane, Homebush	Date : April 10, 2019	
Location: Refer to Drawing No. 19/0962	Logged: DM Checked: MG	Sheet 1 of 1

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF EXCAVATED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			SILTY SANDY GRAVELLY CLAY: dark grey, low plasticity (road base) FILL	CL		D
			SILTY CLAY: orange brown with occasional red and grey, low to medium plasticity	CL		D-M
		1.0	SILTY CLAY: light grey with red mottle, low plasticity, trace of ironstone gravel	CL		D-M
		2.0	SILTY SANDY CLAY: light grey with yellow mottle, medium plasticity, fine grained sand	CL		M
→		3.0	SILTY CLAY: grey, low plasticity	CL		M
→		4.0	SILTY GRAVELLY CLAY: orange brown with grey	CL/GM		M-W
		5.0	SILTY CLAY: light grey/grey, low plasticity (CW Shale)	CL		
			WEATHERED SHALE: grey		EXTREMELY LOW STRENGTH	
			TEST PIT DISCONTINUED AT 5.1 M ON WEATHERED SHALE			

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water H - Hand (recovery) M - Machine (recovery)
N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Milos Earthmoving
Equipment: 20t excavator
Hole Diameter (mm):
Angle from Vertical (°) 0

STS GeoEnvironmental Pty Ltd

ENGINEERING EXCAVATION LOG - TEST PIT

Client: Columbia Lane Development Pty Limited
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project No.: 21024/1803D-G
Date : April 10, 2019
Logged: DM Checked: MG

TEST PIT NO.: TP 2

Sheet 1 of 1

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF EXCAVATED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			SILTY SANDY GRAVELLY CLAY: orange brown/brown, low plasticity	CL		D
			SILTY CLAY: orange brown with minor grey, low plasticity	CL		D-M
		1.0	SILTY CLAY: light grey with red mottle, trac of fine grained sand, medium plasticity	CL		M
			Becoming light grey and orange mottle			
		2.0				
			SILTY GRAVELLY CLAY: low plasticity, coarse ironstone gravel, occasional boulders	CL		W
		3.0				
		4.0				
WT 10/4/19		5.0				
			WEATHERED SHALE: grey		EXTREMELY LOW STRENGTH	
			TEST PIT DISCONTINUED AT 6.1 M ON WEATHERED SHALE			

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water H - Hand (recovery) M - Machine (recovery)
N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Milos Earthmoving
Equipment: 20t excavator
Hole Diameter (mm):
Angle from Vertical (°) 0

STS GeoEnvironmental Pty Ltd

ENGINEERING EXCAVATION LOG - TEST PIT

Client: Columbia Lane Development Pty Limited	Project No.: 21024/1803D-G	**TEST PIT NO.: TP 3**
Project: 11-17 Columbia Lane, Homebush	Date : April 10, 2019	Sheet 1 of 1
Location: Refer to Drawing No. 19/0962	Logged: DM Checked: MG	

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF EXCAVATED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			SILTY GRAVELLY SANDY CLAY: grey, low plasticity, medium to coarse grained sand, medium to coarse gravel (road base/ash)	CL		D
			FILL			
			SILTY CLAY: orange brown/light grey and red brown, low to medium plasticity, trace of gravel	CL		M
		1.0				M-W
			FILL			
			SILTY CLAY: orange brown with grey mottle, medium to high plasticity, trac of fine gravel	CL/CH		M
		2.0				
		3.0				
WT 10/4/19						
			SILTY CLAY: light grey with orange mottle, medium to high plasticity, trace of fine grained sand, some ironstone gravel	CL/CH		M
		4.0				
			WEATHERED SHALE: grey and orange		EXTREMELY LOW STRENGTH	
			TEST PIT DISCONTINUED AT 4.4 M ON WEATHERED SHALE			
		5.0				

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water H - Hand (recovery) M - Machine (recovery)
N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Milos Earthmoving
Equipment: 20t excavator
Hole Diameter (mm):
Angle from Vertical (°) 0

STS GeoEnvironmental Pty Ltd

ENGINEERING EXCAVATION LOG - TEST PIT

Client: Columbia Lane Development Pty Limited
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project No.: 21024/1803D-G
Date : April 10, 2019
Logged: DM Checked: MG

TEST PIT NO.: TP 4

Sheet 1 of 1

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF EXCAVATED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			CONCRETE: (200 mm thick)			
			SANDY SILTY GRAVELLY CLAY: grey brown, low plasticity, medium to coarse grained sand, medium to coarse gravel FILL	CL		D
			SILTY GRAVELLY CLAY: grey brown with red brown, low plasticity, medium gravel FILL	CL		M
		1.0	SILTY SANDY CLAY: grey, medium plasticity, fine grained sand Seepage at fill natural interface	CL		M-W
		2.0	SILTY CLAY: light grey with orange mottle, low to medium plasticity, medium to coarse ironstone gravel	CL		M
		3.0				
		4.0				
		5.0				
			WEATHERED SHALE: grey with brown/orange staining		EXTREMELY LOW STRENGTH	
			TEST PIT DISCONTINUED AT 6.0 M ON WEATHERED SHALE			

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water H - Hand (recovery) M - Machine (recovery)
N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Milos Earthmoving
Equipment: 20t excavator
Hole Diameter (mm):
Angle from Vertical (°) 0

STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development
Project: 11 - 17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project: 21024 / 7145C
Date : 04/07/2016
Logged: MG

BOREHOLE NO.: BH 1

Sheet 1 of 3

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
	S1 @ 0.2 m		SILTY GRAVELLY SAND: dark grey, fine to coarse grained FILL	SP		D
	S2 @ 0.4 m SPT 0.5-0.95 m 4, 8, 8 N=16		GRAVELLY SILTY SAND: dark grey, fine grained FILL	CL		D
	S3 @ 0.7 m SPT 1.5-1.95 m 4, 5, 6 N=11	1.0	GRAVELLY SANDY SILTY CLAY: red brown with brown and grey, some glass/ash/concrete FILL	CL		
	S4 @ 1.7 m		SILTY SANDY CLAY: pale grey and mottled orange, low plasticity, MC<PL PP = >600	CL	STIFF	D-M
		2.0				
	S5 @ 3.2 m SPT 3.0-3.45 m 5, 5, 10 N=15	3.0	SANDY SILTY CLAY: pale grey and mottled orange, medium plasticity, MC>PL PP = 120	CL	FIRM TO STIFF	VM
WT 19/7/16			GRAVELLY SILTY CLAY: orange and red with mottled grey, medium to high plasticity, ironstone gravel, MC=PL	CH	STIFF TO VERY STIFF	M
		4.0				
	SPT 4.5-4.95 m 4, 7, 11 N=18					
			SILTY CLAY: dark grey with mottled orange, high plasticity, MC=PL	CH	HARD	D-M
		5.0	PP = >600			
			WEATHERED SHALE: dark grey		EXTREMELY LOW STRENGTH	D
			BOREHOLE DISCONTINUED AT 6.0 M For cored details, refer to cored log sheet			

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 04/07/2016
Logged: MG
Checked By: MG

BOREHOLE NO.: BH 1
Sheet 2 of 3

DRILLING				MATERIAL STRENGTH											DISCONTINUITIES	
						Estimated Rock Strength							Joint Spacing (mm)			
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20 40 100 300 1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
NMLC CORING				START CORING AT 6.0 M	Hw											6.15 m, Sm, 0 deg, clay, 10mm
				For non cored details, refer to non cored log												6.36 m, Pt, 0 deg, 2mm
				WEATHERED SHALE: pale grey, laminations												6.45 m, Pt, 3 deg, 1mm
																6.85 m, Sm, 0 deg, Ew, 20mm
			7.0													
																7-11 m, HB
																7.40 m, HB
		100%														7.67 m, HB
																7.82 m, HB
			8.0													
	100%															8.02 m, HB
																8.28 m, HB
																8.54 m, HB
																8.70 m, Sm, 0 deg, carbon, 1mm
																8.81 m, HB
					Fr											
			9.0													
																9.31 m, HB
																9.61 m, Pt x 2, 0 deg, 2mm
																9.86 m, HB
																9.91 m, Pt, 0 deg, 1mm
																9.93 m, Pt, 0 deg, 1mm
																9.96 m, Pt, 0 deg, 3mm
																9.98 m, HB
			10.0													
		100%														10.15 m, HB
																10.3 m, Jt, 65 deg, Pl, Ro
																10.43 m, Jt, 30 deg, Pl, Ro
																10.70 m, Jt, 60 deg, Un, Ro
																10.84 m, Fz, 15 mm
																10.97 m, HB
			11.0													
																11.07 m, Jt, 50 deg, Pl, Ro
																11.20 m, HB
																11.28 m, HB
																11.40 m, Fz, 30 mm
																11.49 m, Jt, 40 deg, Pl, Ro
																11.75 m, Jt, 80 deg, Un, Ro
		100%														11.90 m, Jt, 70 deg, Pl, Ro, Sm

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 04/07/2016
Logged: MG
Checked By: MG

BOREHOLE NO.: BH 1
Sheet 3 of 3

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
N M L C	100%	100%		WEATHERED SHALE: dark grey with pale grey, laminations	Fr															12.05 m, Jt, 70 deg, Pl, Sm 12.17, Jt, 45 deg, Pl, Sm 12.20 m, Jt, cut, Sm 12.25 m, Jt, 80 deg, Pl, Sm
			13.0																	
				END CORING AT 12.94 M Standpipe Piezometer Installed																
			14.0																	
			15.0																	
			16.0																	
			17.0																	

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols


Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 4/7/2016
Borehole No. BH1
Depth (m): 6.00 – 12.94 End
Boxes 1 of 2
Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 4/7/2016
Borehole No. BH1
Depth (m): 6.00 – 12.94 End
Boxes 2 of 2
STS
GeoEnvironmental
Pty Ltd
Geotechnical and Environmental Solutions
JOB No. 21024 BH1 START AT 6.0M
6
7
8
9
10
11
12
END
12.94

STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development
Project: 11 - 17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project: 21024 / 7145C
Date : 04/07/2016
Logged: MG

BOREHOLE NO.: BH 2

Sheet 1 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			ASPHALTIC CONCRETE: to 25 mm			
	S6 @ 0.3 m SPT 0.5-0.95 m 3, 5, 3 N = 8		GRAVELLY SILTY SANDY CLAY: grey brown, medium plasticity, concrete/brick/glass/road base	CI/SP		D
	S7 @ 0.6 m		FILL			
		1.0	SANDY SILTY CLAY: orange and mottled grey, MC>PL	CH	FIRM TO STIFF	M
	S8 @ 1.2 m SPT 1.5-1.95 2, 3, 3 N=6		PP = 100			
			SANDY CLAY: pale grey with mottled orange, low to medium plasticity	CI	FIRM	VM
			PP = 70			
		2.0				
WT 19/7/16						
	S9 @ 3.0 m SPT	3.0				
WT	3.0-3.45					
4/7/16	1, 3, 13 N = 16		GRAVELLY SILTY CLAY: red brown and mottled grey, medium to high plasticity, MC>PL	CH	STIFF TO VERY STIFF	W
			PP = 300			M
		4.0				
	SPT 4.5-4.95 m 11, 8, 9 N = 17		PP = 400			
		5.0				
			WEATHERED SHALE: brown and dark grey		EXTREMELY LOW STRENGTH	D

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development	Project: 21024 / 7145C	**BOREHOLE NO.: BH 2**
Project: 11 - 17 Columbia Lane, Homebush	Date : 04/07/2016	
Location: Refer to Drawing No. 19/0962	Logged: MG	Sheet 2 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
	SPT 6.0-3.35 6, 11, >25 N = >36		WEATHERED SHALE: brown to dark grey		EXTREMELY LOW STRENGTH	D
			BOREHOLE DISCONTINUED AT 6.4 M For cored details, refer to cored log sheet			
		7.0				
		8.0				
		9.0				
		10.0				
		11.0				

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 04/07/2016
Logged: MG
Checked By: MG

BOREHOLE NO.: BH2
Sheet 3 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES		
						Estimated Rock Strength							Joint Spacing (mm)			
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20 40 100 300 1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
				For non cored details, refer to non cored log sheet											
				START CORING AT 6.4 M											
				WEATHERED SHALE: dark grey with grey	Ew										6.71 m, Sm, Cy, 10 mm
															9.61 m, Sm, Cy, 5 mm
N					Fr										
M			7.0												
L															7.00 m, HB
C															7.20 m, HB
															7.44 m, HB
C															7.75 m, HB
O		100%													7.88 m, Sm, Ew, 30mm
R															
I															
N															
G															
			8.0												
															8.10 m, HB
															8.22 m, HB
															8.52 m, HB
															8.86 m, Pt, 0 deg, Pl, Ro
															8.90 m, Pt, 0 deg, Pl, Ro
			9.0												
															9.28 m, Jt, 2 deg, Pl, Ro
															9.55 m, Pt, 0 deg, Ro
															9.89 m, Pt, 0 deg, Pl, Ro
			10.0												
		100%													10.08-10.11 m, Jt, 4 deg, Pl, Ro
															10.21-10.29 m, Cz, veneer
															10.31 m, Pl, 0 deg, Pl, Ro
															10.39 m, Pl, 0 deg, Pl, Ro
															10.75-10.78 m, Jt, Ir, Ro
															10.76-10.83 m, Jt, 85 deg, Ir, Ro
															10.99-11.08 m, Jt, Ir, Ro, Fractured
			11.0												
															11.29-11.32 m, Jt, Ir, Ro
															11.53 m, Pt, 0 deg, Pl, Sm
															11.69 m, Jt, 0 deg, Pl, Ro, Cy veneer
															11.76 m, Pt, 0 deg, Pl, Sn
															11.85 m, Pt, 0 deg, Pl. Pw

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 04/07/2016
Logged: MG
Checked By: MG

BOREHOLE NO.: BH 2
Sheet 4 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
N M L C				WEATHERED SHALE: dark grey with grey	Fr															12.36 m, Jt, 0 deg, Pl, Ro 12.54 m, Pt, 0 deg, Pl, Sm
			13.0																	
			14.0																	
			15.0																	
			16.0																	
			17.0																	

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 4/7/2016
Borehole No. BH2
Depth (m): 6.40 – 12.80 End
Boxes 1 of 2

Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 4/7/2016
Borehole No. BH2
Depth (m): 6.40 – 12.80 End
Boxes 2 of 2

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Geotechnical and Environmental Solutions

STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development	Project: 21024 / 7145C	**BOREHOLE NO.: BH 3**
Project: 11 - 17 Columbia Lane, Homebush	Date : 05/07/2016	
Location: Refer to Drawing No. 19/0962	Logged: JK	Sheet 1 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
	S10/11/12		ASPHALTIC CONCRETE: to 40 mm			
	@ 0.2 m		CLAYEY SILTY SAND: light brown, fine grained, low plasticity, occasional gravel	CL	FIRM TO STIFF	D
	S13					
	@ 0.6 m					
	SPT					
	1.0-1.45 m		PP = 50 FILL			
	3, 3, 5		SILTY CLAY: light grey with orange brown, dark grey and red brown, medium to high plasticity, traces of gravel	CL/CH	FIRM TO STIFF	M
	N=8	1.0				
			PP = 400			
			FILL			
	S14		SILTY CLAY: orange brown with light grey and occasional red brown, medium to high plasticity, traces of gravel	CL/CH	STIFF	M
	@ 1.8 m	2.0				
	SPT					
	2.5-2.95					
	5, 6, 8		PP = 350			
	N=14	3.0			VERY STIFF	
	SPT	4.0				
	4.0-4.30					
	10, 22, R		WEATHERED SHALE: dark grey and brown with light grey, clay seams		EXTREMELY LOW STRENGTH	D
		5.0				
			BOREHOLE DISCONTINUED AT 4.8 M			

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project / STS No.: 21024/7145C
Date : 05/07/2016
Logged: JK — Checked By: MG

BOREHOLE NO.: BH 3
Sheet 2 of 4

DRILLING				MATERIAL STRENGTH		DISCONTINUITIES													
						Estimated Rock Strength							Joint Spacing (mm)						
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
			1.0																
			2.0																
			3.0																
			4.0																
			5.0	For non cored details, refer to non cored log sheet START CORING AT 5.60 M															
N M L C				WEATHERED SHALE: dark grey with light grey	Mw														5.60-6.14 m, Cz + Cy,

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 05/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 3
Sheet 3 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES		
						Estimated Rock Strength							Joint Spacing (mm)			
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20 40 100 300 1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
				WEATHERED SHALE: dark grey with light grey	Fr										6.28 m, Jt, 2 deg, Pl, Ro, Cy veneer
															6.52 m, Jt, 12 deg, Ir, Ro, minor Cy
															6.69 m, Pt, 0 deg, Pl, Ro
			7.0												
															7.00-7.05 m, Cz
															7.17-7.22 m, Jt, Ir, Ro
															7.26 m, Pt, 0 deg, Pl, Ro
															7.49-7.68 m, Cz, fractured
															7.75-7.84 m, Jt, Ir, Ro, Cy
			8.0												
															8.08 m, Pt, 3 deg, Pl, Ro
															8.40 m, Pt, 3 deg, Pl, Ro
															8.48 m, Pt, 3 deg, Pl, Sm
															8.66 m, Pt, 3 deg, Pl, Sm
															8.86 m, Jt, 3 deg, Pl, Sm
															8.94 m, Jt, 0 deg, Pl, Ro
			9.0												
															9.07 m, Pt, 3 deg, Pl, Sm
															9.23 m, Jt, 0 deg, Pl, Ro
															9.39 m, Jt, 0 deg, Pl, Ro
															9.64-9.67 m, Jt, Ir, Ro
															9.71 m, Jt, 5 Deg, Pl, Ro
															9.79 m, Pt, 2 deg, Pl, Sm
															9.96 m, Pt, 2 deg, Pl, Ro
			10.0												
															10.17 m, Pt, 2 deg, Pl, Sm
															10.24 m, Pt, 2 deg, Pl, Sm
															10.39 m, Pt, 2 deg Pl, Sm
															10.51 m, Pt, 2 deg, Pl, Sm
															10.55-10.64 m, Jt, Ir, Ro, Cy
															10.74 m, Jt, 2 deg, Pl, Ro
															10.96 m, Pt, 0 deg. Pl, Ro
			11.0												
															11.17 m, Pt, 2 deg, Pl, Sm
															11.34 m, Jt, 0 deg, Pl, Ro
															11.70 m, Jt, 5 deg, Pl, Ro
															11.92 m, Pt, 0 deg, Pl, Sm

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 05/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 3
Sheet 4 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
N M L C			13.0	WEATHERED SHALE: dark grey with light grey	Fr															12.03 m, Pt, 0 deg, Pl, Ro 12.19-12.30 m, Cz + Cy 12.36-12.39 m, Jt, 45 deg, Ir, Ro 12.48-12.53 m, Cz + Cy, Fractured 12.64-12.92 m, Cz + Cy, Fractured 12.95-13.00 m, Jt, 45 deg, Pl, Sm
			14.0 15.0 16.0 17.0	CORING DISCONTINUED AT 13.0 M																

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols


Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 5/7/2016
Borehole No. BH3
Depth (m): 5.60 – 13.00 End
Boxes 1 of 2
Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 5/7/2016
Borehole No. BH3
Depth (m): 5.60 – 13.00 End
Boxes 2 of 2
STS
GeoEnvironmental
Pty Ltd
Geotechnical and Environmental Solutions
BH3
21024
6
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STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development
Project: 11 - 17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project: 21024 / 7145C
Date : 06/07/2016
Logged: JK

BOREHOLE NO.: BH 4

Sheet 1 of 3

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
	S15		ASPHALT: to 20 mm			
	@ 0.3 m		SANDY GRAVEL: black, fine grained	GW		M
			FILL			
	S16		SILTY CLAY: light brown, medium plasticity, traces of gravel	CL		M-VM
	@ 0.8 m					
	SPT	1.0	FILL			
	1.50-1.45 m		SILTY CLAY: orange brown with light grey, low plasticity, traces of fine grained sand	CL	FIRM	M-VM
	2, 2, 1					
	N = 3		PP = 30			
	S17					
	@ 1.2 m				FIRM TO STIFF	
		2.0				
	SPT		GRAVELLY SILTY CLAY: orange brown with red brown an dlight grey, medium to high plasticity, some gravel	CL/CH	STIFF	M
	2.5-2.95 m					
	17, 11, 10					
	N = 21		PP = 200			
	S18					
	@ 2.6 m					
		3.0				
WT			SILTY SANDY CLAY: light grey with orange brown, fine grained sand, medium plaasticity	CL	STIFF	M
19/7/16						
	SPT	4.0				
	4.0-4.45 m					
	3, 3, 3					
	N = 6		PP = 150			
	S19					
	@ 4.1 m					
		5.0				
			WEATHERED SHALE: dark grey with dark brown and orange brown, clay seams		EXTREMELY LOW STRENGTH	M-D
			BOREHOLE DISCONTINUED AT 5.5 M			
			For cored details refer to cored log sheet			

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project / STS No.: 21024/7145C
Date : 06/07/2016
Logged: JK — Checked By: MG

BOREHOLE NO.: BH 4
Sheet 2 of 3

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
			1.0																
			2.0																
			3.0																
			4.0																
			5.0	For non cored details, refer to non cored log sheet START CORING AT 5.5 M															
N M L C				WEATHERED SHALE: dark grey with light grey	Fr/ St														5.50-6.15 m, Numerous Jt/Pt, Ir, Ro, some clay infill, Fractured

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project / STS No.: 21024/7145C
Date : 06/07/2016
Logged: JK — Checked By: MG

BOREHOLE NO.: BH 4
Sheet 3 of 3

DRILLING				MATERIAL STRENGTH											DISCONTINUITIES	
						Estimated Rock Strength							Joint Spacing (mm)			
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20 40 100 300 1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
N M L C C O R I N G			7.0	WEATHERED SHALE: dark grey with light grey	Fr/ St										6.15 m, Jt, 2 deg, Pl, Sm
															6.29 m, Jt, 2 deg, Pl, Sm
															6.45-6.50 m, Jt, 50 deg
															6.58-7.04 m, Jt, Pt, Ir, Ro, Minor clay (Fractured)
					Fr										
															7.43-7.46 m, Jt, 45 deg, Pl, Ro
															7.93 m, Jt, 0 deg, Pl, Ro
															7.98-8.04 m, Jt, 60 deg, Pl, Ro
			8.0												8.06 m, Jt, 0 deg, Pl, Ro
															8.09-8.13 m, Jt, 50 deg, Ir, Ro
															8.19 m, Jt, 0 deg, Pl, Ro
															8.24 m, Jt, Ir, Ro
															8.30-8.35 m, Jt, Pt, Ir, Ro, Clay infill
															8.58-8.70 m, Jt, 80 deg, Ir, Ro, Fractured
															8.77-8.80, Pt, Ir, Ro
															8.88-8.95 m, Jt, 80, Ir, Ro
			9.0												8.98-9.02 m, Jt, 20 deg, Pl, Ro
															9.09-9.11 m, Jt, 20 deg, Pl, Ro
															9.13-9.14 m, Jt, 15 deg, Pl, Ro
															9.18-9.21 m, Jt, 20 deg, Pl, Ro
															9.30-9.31 m, Jt, 20 deg, Pl, Ro
															9.40-9.45 m, Jt, Pt, Ir, Ro, fractured
															9.50-9.55 m, Jt, Ir, Ro
															9.86 m, Jt, 0 deg, Pl, Ro
															9.89-9.93 m, Jt, 45 deg, Pl, Sm
			10.0												10.04-10.16 m, Pt, 0 deg, Pl, Ro
															10.48-10.50 m, Jt, 10 deg, Pl, Ro
															10.52-10.59 m, Jt, 5 deg, Pl, Ro
															10.75 m, Jt, 3 deg, Pl, Sm
			11.0												11.14 m, Jt, 3 deg, Pl, Ro
															11.31-11.62 m, Numerous Jt/Pt, Clay infill
															11.67-11.73 m, Jt, 85 deg, Pl, Ro
															11.77 m, Jt, Ir, Ro
				Standpipe Piezometer Installed											
				CORING DISCONTINUED AT 11.93 M											

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 6/7/2016
Borehole No. BH4
Depth (m): 5.50 – 11.93 End
Boxes 1 of 2

Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 6/7/2016
Borehole No. BH4
Depth (m): 5.50 – 11.93 End
Boxes 2 of 2

STS GeoEnvironmental Pty Ltd
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GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development
Project: 11 - 17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project: 21024 / 7145C
Date : 06/07/2016
Logged: JK

BOREHOLE NO.: BH 5

Sheet 1 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			CONCRETE: 340 mm thick			
	S20 @ 0.5 m		GRAVELLY SNADY CLAY: black, fine grained, low plasticity, some gravel FILL	CL		M
	S21 @ 1.0 m SPT 1.0-1.45 m 1, 2, 2 N = 3	1.0	SILTY CLAY: light grey and brown with orange brown, medium to high plasticity PP = 30	CL/CH	FIRM	M
		2.0	SILTY CLAY: orange brown with light grey, medium to high plasticity	CL/CH	FIRM TO STIFF	M
	SPT 2.5-2.95 m 6, 6, 4 N = 10	3.0	SILTY CLAY: light grey with orange brown, medium plasticity, traces of fine sand PP = 250	CL	STIFF	M
	SPT 4.0-4.45 m 3, 2, 2 N = 4	4.0	PP = 100		FIRM TO STIFF	M-VM
	SPT 5.50-5.95 m 12, 8, 11 N = 19	5.0	PP = 300		STIFF	
			SILTY CLAY: light grey with orange brown and light brown, medium to high plasticity, traces of gravel	CL/CH		M

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development	Project: 21024 / 7145C	**BOREHOLE NO.: BH 5**
Project: 11 - 17 Columbia Lane, Homebush	Date : 06/07/2016	
Location: Refer to Drawing No. 19/0962	Logged: JK	Sheet 2 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			SILTY CLAY: light grey with orange brown and light brown, medium to high plasticity, traces of gravel	CL/CH	VERY STIFF	M
			WEATHERED SHALE: dark grey and brown with orange brown, clay seams		EXTREMELY LOW STRENGTH	D
		7.0	BOREHOLE DISCONTINUED AT 7.0 M For cored details, refer to cored log sheet			
		8.0				
		9.0				
		10.0				
		11.0				

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 5
Sheet 3 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES		
						Estimated Rock Strength							Joint Spacing (mm)			
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20 40 100 300 1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
				For non cored details, refer to non cored log sheet											
			7.0	START CORING AT 7.0 M											
N M L C CORING				WEATHERED SHALE: dark grey with light grey	Fr/ St										7.00-9.04 m, Numerous Jt/Pt, Ir, Ro, Fractured -minor clay infill
			8.0		Fr										
			9.0												9.13 m, Pt, 0 deg, Pl, Ro 9.15-9.49 m, Jt, 90 deg, Ir, Ro 9.64 m, Jt, 5 deg, Pl, Sm 9.76-9.83 m, Jt, Und, Ro 9.94 m, Jt, 2 deg, Pl, Sm
			10.0												10.04-10.10, Jt, 90 deg, Ir, Ro 10.26 m, Jt, 0 deg, Pl, Ro 10.37-10.44 m, Jt, Pt, Ir, Ro 10.64 m, Jt, 2 deg, Pl, Sm 10.74 m, Pt, 5 deg, Pl, Sm 10.89 m, Jt, 2 deg, Pl, Sm, Cy veneer 10.93-10.95 m, Jt, 20 deg, Ir, Ro
			11.0												11.04-12.18 m, Numerous Jt/Pt, Ir, Ro

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 5
Sheet 4 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES						
						Estimated Rock Strength							Joint Spacing (mm)							
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
N M L C				WEATHERED SHALE: dark grey with light grey	Fr														12.26 m, Pt, 0 deg, Pl, Ro 12.55 m, Pt, Ir, Ro 12.63-12.75 m, Jt/Pt, Ir, Ro 12.80-12.92 m, Jt, 0 deg, Pl, Ro
			13.0																	
				CORING DISCONTINUED AT 13.00 M																
			14.0																	
			15.0																	
			16.0																	
			17.0																	

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 7/7/2016
Borehole No. BH5
Depth (m): 7.00 – 13.00 End
Boxes 1 of 2

Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 7/7/2016
Borehole No. BH5
Depth (m): 7.00 – 13.00 End
Boxes 2 of 2

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GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development	Project: 21024 / 7145C	**BOREHOLE NO.: BH 6**
Project: 11 - 17 Columbia Lane, Homebush	Date : 07/07/2016	
Location: Refer to Drawing No. 19/0962	Logged: JK	Sheet 1 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			CONCRETE: 160 mm thick			
	S22/23/24 @ 0.3 m		GRAVELLY SILTY CLAY: dark brown with orange brown and light grey, medium plasticity, some gravel	CL		M
	S25 @ 1.0 m SPT	1.0	FILL			
	1.0-1.45 m, 1, 0, 1 N=1 S26 @ 1.2 m		SILTY CLAY: light brown and orange brown with light grey and occasional black, medium to high plasticity	CL/CH	SOFT	M-VM
		2.0				
WT 7/7/16	SPT 2.5-2.95 m 5, 5, 5 N=10		CLAYEY SILTY SAND: orange brown with light grey, fine to medium grained	SC	FIRM	WET
			SILTY CLAY: orange brown and orange brown with light grey and occasional black, medium to high plasticity PP = 250	CL/CH	STIFF	M
		3.0				
			SILTY CLAY: light grey with yellow brown and orange brown, medium to high plasticity	CL/CH	STIFF	M
	SPT 4.0-4.45 m 4, 5, 6 N=11	4.0	PP = 350			
		5.0				
	SPT 5.5-5.95 m 5, 6, 7 N=13 S27 @ 5.6 m				VERY STIFF	

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development
Project: 11 - 17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project: 21024 / 7145C
Date : 07/07/2016
Logged: JK

BOREHOLE NO.: BH 6

Sheet 2 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			SILTY CLAY: light grey with yellow brown and orange brown, medium to high plasticity	CL/CH	VERY STIFF	M
			WEATHERED SHALE: dark grey and brown with orange brown, clay seams		EXTREMELY LOW STRENGTH	M-D
			BOREHOLE DISCONTINUED AT 6.4 M For cored details, refer to cored log sheet			
		7.0				
		8.0				
		9.0				
		10.0				
		11.0				

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK — Checked By: MG

BOREHOLE NO.: BH 6
Sheet 3 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
				For non cored details, refer to non cored log sheet															
				START CORING AT 6.4 M															
N M L C CORING			7.0	WEATHERED SHALE: dark grey with light grey	Fr														6.40 m, Jt, 0 deg, Pl, Ro 6.41 m, Jt, 0 deg, Pl, Ro 6.42 m, Jt, 0 deg, Pl, Ro 6.50 m, Jt, 0 deg, Pl, Ro, Cy veneer 6.61 m, Jt, 0 deg, Pl, Ro 6.62 m, Jt, 0 deg, Pl, Ro, Cy veneer 6.77 m, Jt, 0 deg, Pl, Ro 6.89 m, Jt, 0 deg, Pl, Ro 6.93 m, Jt, 0 deg, Pl, Ro 7.18 m, Pt, 0 deg, Pl, Sm 7.37 m, Pt, 0 deg, Pl, Ro 7.48-7.56 m, Jt, Ro, minor Cy 7.78 m, Pt, 0 deg, Pl, Ro 7.93 m, Pt, 0 deg, Pl, Sm
			8.0																8.03 m, Pt, 0 deg, Pl, Sm 8.30-8.36 m, Jt, 70 deg, Ir, Ro 8.36-8.50 m, Jt, 85 deg, Ir, Ro 8.58 m, Pt, 0 deg, Pl, Sm 8.68 m, Pt, 0 deg, Pl, Sm 8.81 m, Pt, 0 deg, Pl, Sm 8.90 m, Pt, 0 deg, Pl, Sm
			9.0																9.11-9.16 m, Jt, 50 deg, Pl, Ro 9.46 m, Pt, 0 deg, Pl, Sm 9.96 m, Pt, 0 deg, Pl, Sm
			10.0																10.08 m, Pt, 0 deg, Pl, Sm 10.41 m, Pt, 0 deg, Pl, Sm 10.58 m, Pt, 10 deg, Pl, Sm 10.90-11.17 m, Jt, 85 deg, Ir, Ro, fractured
			11.0																11.23-11.63 m, Jt, 90 deg, Ir, Ro 11.89 m, Jt, 0 deg, Pl, Sm

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 6
Sheet 4 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
N M L C			13.0	WEATHERED SHALE: dark grey with light grey	Fr															12.16 m, Pt, 0 deg, Pl, Sw 12.25 m, Jt, 0 deg, Pl, Ro 12.65 m, Jt, 0 deg, Pl, Ro
			14.0	BOREHOLE DISCONTINUED AT 12.96 M																
			15.0																	
			16.0																	
			17.0																	

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 7/7/2016
Borehole No. BH6
Depth (m): 6.40 – 12.96 End
Boxes 1 of 2

Project: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 7/7/2016
Borehole No. BH6
Depth (m): 6.40 – 12.96 End
Boxes 2 of 2

STS GeoEnvironmental Pty Ltd
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GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development
Project: 11 - 17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project: 21024 / 7145C
Date : 08/07/2016
Logged: JK

BOREHOLE NO.: BH 7

Sheet 1 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			CONCRETE: to 140 mm			
	S28 @ 0.2 m		SILTY CLAY: light brown with orange brown, medium plasticity	CL	FIRM TO STIFF	M-VM
			SILTY CLAY: red brown and orange brown with light grey, medium to high plasticity	CL/CH	STIFF	M
	SPT 1.0-1.45 m 3, 4, 5 N=9	1.0	PP = 350			
	S29 @ 1.2 m		SILTY CLAY: light grey with red brown, medium to high plasticity, occasional gravel	CL/CH	STIFF	M
	SPT 2.5-2.95 m 5, 6, 8 N=14	2.0	PP = 380			
		3.0	SILTY CLAY: light grey with orange brown, medium plasticity, traces of gravel	CL	VERY STIFF	M-D
	SPT 4.0-4.30 m 8, 22 N=22+	4.0	WEATHERED SHALE: light grey and dark grey with brown and orange brown, clay seams		EXTREMELY LOW STRENGTH	D
WT 19/7/16		5.0				
			BOREHOLE DISCONTINUED AT 5.5 M For cored details, refer to cored log sheets			

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 7
Sheet 2 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
			1.0																	
			2.0																	
			3.0																	
			4.0																	
			5.0																	
				For non cored details, refer to non cored log sheet																
				START CORING AT 5.64 M																
N M L C				WEATHERED SHALE: dark grey with light grey and orange brown	Sw															5.64-7.13 m, Numerous Jt/Pt, 0-90, Ir, Ro, Clay infill

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 7
Sheet 3 of 4

DRILLING				MATERIAL STRENGTH		Estimated Rock Strength							Joint Spacing (mm)					DISCONTINUITIES	
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000	Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
NMLC CORING			7.0	WEATHERED SHALE: dark grey with light grey and orange brown	Fr														
				WEATHERED SHALE: dark grey with light grey	Fr														7.32-7.38 m, Jt, Ir, Ro 7.56 m, Pt, 2 deg, Pl, Sm 7.78 m, Pt, 4 deg, Pl, Sm 7.95 m, Jt, 0 deg. Pl, Ro
			8.0																8.19 m, Jt, 0 deg, Pl, Ro 8.31-8.34 m, Jt, Ir, Ro 8.63 m, Jt, 0 deg, Pl, Ro 8.92 m, Jt, 5 deg, Pl, Ro
			9.0																9.08 m, Jt, 0 deg, Pl, Ro 9.32-9.35 m, Jt, 45 deg, Ir, Ro, Sm 9.42-9.45 m, Jt, Ir, Ro 9.48 m, Jt, 2 deg, Pl, Sm 9.80 m, Pt, 0 deg, Pl, Sm
			10.0																10.19 m, Pt, 0 deg, Pl, Sm 10.31 m, Jt, 0 deg, Pl, Sm 10.44 m, Pt, 0 deg, Pl, Sm 10.68 m, Pt, 0 deg, Pl, Sm 10.79 m, Pt, 0 deg, Pl, Ro 10.95 m, Pt, 0 deg, Pl, Ro
			11.0																11.73 m, Pt, 0 deg, Pl, Sm 11.80 m, Pt, 0 deg, Pl, Ro

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 7
Sheet 4 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
N				WEATHERED SHALE: dark grey with light grey	Fr															12.34-12.37 m, Jt, 45 deg, Pl, Ro
M																				12.77 m, Pt, 0 deg, Pl, Ro
L																				12.92 m, Jt, Ir, Ro
C																				12.95 m, Jt, Ir, Ro
C																				
O																				
R																				
I																				13.02 m, Jt, 0 deg, Pl, Ro
N			13.0																	13.11 Pt, 0 deg, Pl, Ro
G																				13.16 m, Jt, 0 deg, Pl, Ro
																				13.20 m, Jt, 0 deg, Pl, Ro
																				13.35 m, Pt, 0 deg, Pl, Ro
				CORING DISCONTINUED AT 13.28 M																
				Standpipe Piezometer Installed																
			14.0																	
			15.0																	
			16.0																	
			17.0																	

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

PROJECT: 11 – 17 COLUMBIA LANE, HOMEBUSH
Project No: 21024/7145C
Client: Columbia Lane Development Pty Ltd
Borehole No: BH7
Depth (m) Start 5.64m – 13.28m End
Box 1 & 2 of 2

STS GeoEnvironmental Pty Ltd
Geotechnical and Environmental Solutions

STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development
Project: 11 - 17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project: 21024 / 7145C
Date : 11/07/2016
Logged: JK

BOREHOLE NO.: BH 8

Sheet 1 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			CONCRETE: to 100 mm			
	S30 @ 0.2 m		GRAVELLY SILTY CLAY: dark grey with dark brown and light grey, low plasticity, some gravel FILL	CL		M
	S31 @ 0.6 m		SILTY CLAY: light brown and orange brown with light grey, medium to high plasticity	CL/CH	FIRM TO STIFF	M
	SPT 1.0-1.45 m 2, 3, 4 N=7	1.0				
		2.0	SILTY CLAY: red brown with light grey and orange brown, medium to high plasticity	CL/CH	STIFF	M
	SPT 2.5-2.95 m 5, 6, 7 N=13		SILTY CLAY: light grey with orange brown and red brown, medium to high plasticity PP = 250	CL/CH	STIFF	M
	S32 @ 2.6 m	3.0				
	SPT 4.0-4.45 m 3,4,5 N=9	4.0	PP = 280			
		5.0	SILTY CLAY: light grey with dark grey and orange brown, medium plasticity, traces of gravel	CL	VERY STIFF	M-D
	S33 @ 5.2 m					

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

STS GeoEnvironmental Pty Ltd

GEOTECHNICAL LOG - NON CORE BOREHOLE

Client: Columbia Lane Development
Project: 11 - 17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962

Project: 21024 / 7145C
Date : 11/07/2016
Logged: JK

BOREHOLE NO.: BH 8

Sheet 2 of 4

WATER TABLE	SAMPLES	DEPTH (m)	DESCRIPTION OF DRILLED PRODUCT (Soil type, colour, grain size, plasticity, minor components, observations)	SYMBOL	CONSISTENCY (cohesive soils) or RELATIVE DENSITY (sands and gravels)	MOISTURE
			SILTY CLAY: light grey with dark grey and orange brown, medium to high plasticity, traces of gravel	CL		M-D
			WEATHERED SHALE: dark grey, clay seams		EXTREMELY LOW STRENGTH	D
			BOREHOLE DISCONTINUED AT 6.6 M For cored details, refer to cored log sheet			
		7.0				
		8.0				
		9.0				
		10.0				
		11.0				

NOTES: D - disturbed sample U - undisturbed tube sample B - bulk sample
WT - level of water table or free water N - Standard Penetration Test (SPT)

See explanation sheets for meaning of all descriptive terms and symbols

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm): 100
Angle from Vertical (°) 0

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 8
Sheet 3 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
				For non cored details, refer to non cored log sheet START CORING AT 6.65 M																	
N M L C C O R I N G			7.0 8.0 9.0 10.0 11.0	WEATHERED SHALE: dark grey with light grey	Fr																6.66 m, Jt, 0 deg, Pl, Ro 6.67 m, Jt, 0 deg, Pl, Ro 6.75 m, Jt, 0 deg, Pl, Ro, Cy 6.77-6.78 m, Cy, Sm 6.87 m, Jt, 0 deg, Pl, Ro, Cy 6.93 m, Jt, 0 deg, Pl, Ro, Cy 7.07 m, Jt, 0 deg, Pl, Ro, Cy 7.15 m, Jt, 0 deg, Pl, Ro 7.24 m, Jt, 0 deg, Pl, Ro, Cy veneer 7.29-7.31 m, Cy, Sm 7.39 m, Jt, 0 deg, Pl, Ro 7.56-7.59 m, Jt, 45 deg, Ir, Ro 7.67-7.70 m, Jt, Ir, Ro, Cy 7.82 m, Jt, 0 deg, Pl, Sm 7.90 m, Jt, 0 deg, Pl, Sm 7.95 m, Jt, 0 deg, Pl, Sm 8.14 m, Jt, 0 deg, Pl, Sm 8.50 m, Jt, 0 deg, Ir, Ro 8.70 m, Pt, 0 deg, Pl, Ro 8.77 m, Pt, 0 deg, Pl, Ro 8.82 m, Jt, 0 deg, Pl, Sm, Cy veneer 9.20 m, Pt, 0 deg, Pl, Sm 9.36 m, Pt, 0 deg, Pl, Ro 9.70-9.75 m, Jt, 45 deg, Pl, Ro 9.87 m, Pt, 0 deg, Pl, Sm 10.13 m, Pt, 0 deg, Pl, Sm 10.50 m, Pt, 0 deg, Pl, Sm 11.23 m, Pt, 0 deg, Pl, Ro 11.42 m, Jt, 0 deg, Pl, Ro 11.65 m, Pt, 0 deg, Pl, Ro

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

SMEC Testing Services Pty Ltd — **GEOTECHNICAL LOG - CORED BOREHOLE**

Client: Columbia Lane Developments
Project: 11-17 Columbia Lane, Homebush
Location: Refer to Drawing No. 19/0962
Project / STS No.: 21024/7145C
Date : 07/07/2016
Logged: JK
Checked By: MG

BOREHOLE NO.: BH 8
Sheet 4 of 4

DRILLING				MATERIAL STRENGTH										DISCONTINUITIES							
						Estimated Rock Strength							Joint Spacing (mm)								
Method	Water	Recovery	Depth (m)	Rock Type (Colour, Grain Size, Structure & Minor Components)	Weathering	Extremely Low	Very Low	Low	Medium	High	Very High	Extremely High	20	40	100	300	1000		Visual	Additional Data (Joints, partings, seams, zones etc. Description, orientation, infilling, or coating, shape, roughness, thickness, other)
N M L C				WEATHERED SHALE: dark grey with light grey	Fr															12.09 m, Pt, 0 deg, Pl, Sm 12.46 m, Jt, 0 deg, Pl, Ro 12.83 m, Pt, 0 deg, Pl, Ro
			13.0	CORING DISCONTINUED AT 12.87 M																
			14.0																	
			15.0																	
			16.0																	
			17.0																	

Notes:

Contractor: Terratest
Equipment: Hydropower Scout
Hole Diameter (mm):
Angle from Vertical (°):

See explanation sheets for meaning of all descriptive terms and symbols

Project: 11 – 17 COLUMBIA LANE,HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 8/7/2016
Borehole No. BH8
Depth (m): 6.65 – 12.87 End
Boxes 1 of 2

Project: 11 – 17 COLUMBIA LANE,HOMEBUSH
Project No. 21024/7145C
Client: Columbia Lane Development Pty Ltd
Date Cored: 8/7/2016
Borehole No. BH8
Depth (m): 6.65 – 12.87 End
Boxes 2 of 2

STS GeoEnvironmental Pty Ltd
Geotechnical and Environmental Solutions

SMEC Testing Services Pty Ltd
14/1 Cowpasture Place, Wetherill Park NSW 2164
Phone: (02)9756 2166 Fax: (02)9756 1137 Email: enquiries@smectesting.com.au

Point Load Strength Index Report

Project: 11-17 COLUMBIA LANE, HOMEBUSH
Client: COLUMBIA LANE DEVELOPMENT PTY LTD
Address: 3/1 Belmore Street, Burwood
Test Method: AS4133.4.1

Project No.: 21024/7145C
Report No.: 16/1965
Report Date: July 29, 2016

Sampling Procedure: AS 1289.1.2.1 Clause 6.5.3 - Power Auger Drilling (Not covered under NATA Scope of Accreditation)

Date Samples Drilled / Taken: 4/7/2016

Borehole No. BH1

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
6.06	D	**0.62**	SH	LA	M
	A	**1.03**	SH	LA	M
7.00	D	**1.00**	SH	LA	M
7.06	A	**2.23**	SH	LA	M
8.54	D	**1.08**	SH	LA	M
	A	**2.09**	SH	LA	M
9.86	D	**0.83**	SH	LA	M
	A	**1.77**	SH	LA	M
10.17	D	**0.98**	SH	LA	M
10.24	A	**1.14**	SH	LA	M
11.30	D	**0.40**	SH	LA	M
	A	**1.36**	SH	LA	M
12.33	D	**1.16**	SH	LA	M
	A	**1.67**	SH	LA	M

Sampling Procedure: AS 1289.1.2.1 Clause 6.5.3 - Power Auger Drilling (Not covered under NATA Scope of Accreditation)

Date Samples Drilled / Taken: 4/7/2016

Borehole No. BH2

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
6.77	D	**0.48**	SH	LA	M
	A	**0.76**	SH	LA	M
7.75	D	**0.86**	SH	LA	M
	A	**1.02**	SH	LA	M
8.36	D	**1.04**	SH	LA	M
	A	**2.71**	SH	LA	M
9.56	D	**1.69**	SH	LA	M
	A	**2.08**	SH	LA	M
10.00	D	**1.54**	SH	LA	M
	A	**1.55**	SH	LA	M
11.51	D	**1.3**	SH	LA	M
	A	**1.75**	SH	LA	M
12.37	D	**1.71**	SH	LA	M
	A	**2.25**	SH	LA	M

STRUCTURE	TEST TYPE	MOISTURE CONDITION	ROCK TYPE
MA= MASSIVE	A= AXIAL	W= WET	SS= SANDSTONE
BE= BEDDED	D= DIMETRAL	M= MOIST	ST= SILTSTONE
LA= LAMINATED	I= IRREGULAR	D= DRY	SH= SHALE
CR= CRYSTALLINE	C= CUBE		YS= CLAYSTONE
			IG= IGNEOUS

Remarks:

Approved Signatory.....

Technician: FV/MB

Laurie Ihnativ - Manager

SMEC Testing Services Pty Ltd
14/1 Cowpasture Place, Wetherill Park NSW 2164
Phone: (02)9756 2166 Fax: (02)9756 1137 Email: enquiries@smectesting.com.au

Point Load Strength Index Report

Project: 11-17 COLUMBIA LANE, HOMEBUSH
Client: COLUMBIA LANE DEVELOPMENT PTY LTD
Address: 3/1 Belmore Street, Burwood
Test Method: AS4133.4.1

Project No.: 21024/7145C
Report No.: 16/1965
Report Date: July 29, 2016

Sampling Procedure: AS 1289.1.2.1 Clause 6.5.3 - Power Auger Drilling (Not covered under NATA Scope of Accreditation)

Date Samples Drilled / Taken: 5/7/2016

Borehole No. BH3

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
6.52	D	**0.18**	SH	LA	M
	A	**0.80**	SH	LA	M
7.70	D	**0.05**	SH	LA	M
	A	**0.63**	SH	LA	M
8.00	D	**0.92**	SH	LA	M
	A	**1.51**	SH	LA	M
9.65	D	**1.65**	SH	LA	M
	A	**1.68**	SH	LA	M
10.23	D	**0.49**	SH	LA	M
	A	**1.73**	SH	LA	M
11.56	D	**0.98**	SH	LA	M
	A	**1.30**	SH	LA	M
12.58	D	**1.63**	SH	LA	M
	A	**0.82**	SH	LA	M

Sampling Procedure: AS 1289.1.2.1 Clause 6.5.3 - Power Auger Drilling (Not covered under NATA Scope of Accreditation)

Date Samples Drilled / Taken: 5/7/2016

Borehole No. BH4

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
5.65	D	**1.06**	SH	LA	M
	A	**1.42**	SH	LA	M
6.17	D	**0.57**	SH	LA	M
	A	**1.24**	SH	LA	M
7.82	D	**0.28**	SH	LA	M
	A	**0.93**	SH	LA	M
8.80	D	**0.08**	SH	LA	M
	A	**0.43**	SH	LA	M
9.31	D	**1.17**	SH	LA	M
	A	**1.05**	SH	LA	M
10.06	D	**0.84**	SH	LA	M
	A	**1.36**	SH	LA	M
11.19	D	**0.57**	SH	LA	M
	A	**0.92**	SH	LA	M

STRUCTURE
MA= MASSIVE
BE= BEDDED
LA= LAMINATED
CR= CRYSTALLINE

TEST TYPE
A= AXIAL
D= DIMETRAL
I= IRREGULAR
C= CUBE

MOISTURE CONDITION
W= WET
M= MOIST
D= DRY

ROCK TYPE
SS= SANDSTONE
ST= SILTSTONE
SH= SHALE
YS= CLAYSTONE
IG= IGNEOUS

Remarks:

NATA Accredited Laboratory Number 2750
Accredited for compliance with ISO/IEC 17025
The results of tests, calibrations and / or measurements included in this document are traceable to Australian / national standards

Approved Signatory.....

Technician: MB

Laurie Ihnativ - Manager

SMEC Testing Services Pty Ltd
14/1 Cowpasture Place, Wetherill Park NSW 2164
Phone: (02)9756 2166 Fax: (02)9756 1137 Email: enquiries@smectesting.com.au

Point Load Strength Index Report

Project: 11-17 COLUMBIA LANE, HOMEBUSH
Client: COLUMBIA LANE DEVELOPMENT PTY LTD
Address: 3/1 Belmore Street, Burwood
Test Method: AS4133.4.1

Project No.: 21024/7145C
Report No.: 16/1965
Report Date: July 29, 2016

Sampling Procedure: AS 1289.1.2.1 Clause 6.5.3 - Power Auger Drilling (Not covered under NATA Scope of Accreditation)

Date Samples Drilled / Taken: 5/7/2016

Borehole No. BH5

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
7.31	D	**0.21**	SH	LA	M
	A	**0.97**	SH	LA	M
8.55	D	**1.31**	SH	LA	M
	A	**0.58**	SH	LA	M
9.40	D	**0.86**	SH	LA	M
	A	**0.83**	SH	LA	M
10.64	D	**1.10**	SH	LA	M
	A	**0.93**	SH	LA	M
11.00	D	**0.96**	SH	LA	M
	A	**0.36**	SH	LA	M
12.17	D	**0.16**	SH	LA	M
	A	**0.70**	SH	LA	M

Sampling Procedure: AS 1289.1.2.1 Clause 6.5.3 - Power Auger Drilling (Not covered under NATA Scope of Accreditation)

Date Samples Drilled / Taken: 5/7/2016

Borehole No. BH6

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
6.50	D	**0.98**	SH	LA	M
	A	**1.49**	SH	LA	M
7.38	D	**1.03**	SH	LA	M
	A	**1.65**	SH	LA	M
8.58	D	**1.63**	SH	LA	M
	A	**1.71**	SH	LA	M
9.00	D	**1.47**	SH	LA	M
	A	**1.76**	SH	LA	M
10.41	D	**0.59**	SH	LA	M
	A	**2.14**	SH	LA	M
11.91	D	**0.82**	SH	LA	M
	A	**2.76**	SH	LA	M
12.45	D	**0.28**	SH	LA	M
	A	**1.54**	SH	LA	M

STRUCTURE
MA= MASSIVE
BE= BEDDED
LA= LAMINATED
CR= CRYSTALLINE

TEST TYPE
A= AXIAL
D= DIMETRAL
I= IRREGULAR
C= CUBE

MOISTURE CONDITION
W= WET
M= MOIST
D= DRY

ROCK TYPE
SS= SANDSTONE
ST= SILTSTONE
SH= SHALE
YS= CLAYSTONE
IG= IGNEOUS

Remarks:

NATA Accredited Laboratory Number 2750
Accredited for compliance with ISO/IEC 17025
The results of tests, calibrations and / or measurements included in this document are traceable to Australian / national standards

Approved Signatory.....

Technician: MB

Laurie Ihnativ - Manager

SMEC Testing Services Pty Ltd
14/1 Cowpasture Place, Wetherill Park NSW 2164
Phone: (02)9756 2166 Fax: (02)9756 1137 Email: enquiries@smectesting.com.au

Point Load Strength Index Report

Project: 11-17 COLUMBIA LANE, HOMEBUSH
Client: COLUMBIA LANE DEVELOPMENT PTY LTD
Address: 3/1 Belmore Street, Burwood
Test Method: AS4133.4.1

Project No.: 21024/7145C
Report No.: 16/1965
Report Date: July 29, 2016

Sampling Procedure: AS 1289.1.2.1 Clause 6.5.3 - Power Auger Drilling (Not covered under NATA Scope of Accreditation)

Date Samples Drilled / Taken: 5/7/2016

Borehole No. BH7

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
6.16	D	**0.22**	SH	LA	M
	A	**0.44**	SH	LA	M
7.35	D	**0.71**	SH	LA	M
	A	**1.41**	SH	LA	M
8.92	D	**1.13**	SH	LA	M
	A	**1.18**	SH	LA	M
9.39	D	**0.36**	SH	LA	M
	A	**1.17**	SH	LA	M
10.69	D	**1.74**	SH	LA	M
	A	**2.42**	SH	LA	M
11.80	D	**1.07**	SH	LA	M
	A	**2.14**	SH	LA	M
12.77	D	**0.18**	SH	LA	M
	A	**2.64**	SH	LA	M
13.00	D	**0.18**	SH	LA	M
	A	**1.59**	SH	LA	M

Sampling Procedure: AS 1289.1.2.1 Clause 6.5.3 - Power Auger Drilling (Not covered under NATA Scope of Accreditation)

Date Samples Drilled / Taken: 5/7/2016

Borehole No. BH8

Depth	Test Type	Is(50) (Mpa)	Rock Type	Rock Structure	Moisture
6.74	D	**0.79**	SH	LA	M
	A	**0.50**	SH	LA	M
7.45	D	**1.45**	SH	LA	M
	A	**1.33**	SH	LA	M
8.70	D	**1.70**	SH	LA	M
	A	**2.45**	SH	LA	M
9.22	D	**1.73**	SH	LA	M
	A	**3.21**	SH	LA	M
10.00	D	**1.19**	SH	LA	M
	A	**3.61**	SH	LA	M
11.00	D	**0.36**	SH	LA	M
	A	**0.65**	SH	LA	M
12.00	D	**1.65**	SH	LA	M
	A	**1.78**	SH	LA	M

STRUCTURE	TEST TYPE	MOISTURE CONDITION	ROCK TYPE
MA= MASSIVE	A= AXIAL	W= WET	SS= SANDSTONE
BE= BEDDED	D= DIMETRAL	M= MOIST	ST= SILTSTONE
LA= LAMINATED	I= IRREGULAR	D= DRY	SH= SHALE
CR= CRYSTALLINE	C= CUBE		YS= CLAYSTONE
			IG= IGNEOUS

Remarks:

NATA Accredited Laboratory Number 2750
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The results of tests, calibrations and / or measurements included in this document are traceable to Australian / national standards

Approved Signatory.....

Technician: MB

Laurie Ihnativ - Manager

E1. CLASSIFICATION OF SOILS

E1.1 Soil Classification and the Unified System

An assessment of the site conditions usually includes an appraisal of the data available by combining values of engineering properties obtained by the site investigation with descriptions, from visual observation of the materials present on site.

The system used by SMEC in the identification of soil is the Unified Soil Classification system (USC) which was developed by the US Army Corps of Engineers during World War II and has since gained international acceptance and has been adopted in its metricated form by the Standards Association of Australia.

The Australian Site Investigation Code (AS1726-1981, Appendix D) recommends that the description of a soil includes the USC group symbols which are an integral component of the system.

The soil description should contain the following information in order:

Soil composition

- SOIL NAME and USC classification symbol (IN BLOCK LETTERS)
- plasticity or particle characteristics
- colour
- secondary and minor constituents (name estimated proportion, plasticity or particle characteristics, colour

Soil condition

- moisture condition
- consistency or density index

Soil structure

- structure (zoning, defects, cementing)

Soil origin

interpretation based on observation eg FILL, TOPSOIL, RESIDUAL, ALLUVIUM.

E1.2 Soil Composition

(a) Soil Name and Classification Symbol

The USC system is summarized in Figure E1.2.1. The primary division separates soil types on the basis of particle size into:

- Coarse grained soils - more than 50% of the material less than 60 mm is larger than 0.06 mm (60 µm).

- Fine grained soils - more than 50% of the material less than 60 mm is smaller than 0.06 mm (60 µm).

Initial classification is by particle size as shown in Table E1.2.1. Further classification of fine grained soils is based on plasticity.

TABLE E1.2.1 - CLASSIFICATION BY PARTICLE SIZE

NAME	SUB-DIVISION	SIZE
Clay (1)		< 2 µm
Silt (2)		2 µm to 60 µm
Sand	Fine Medium Coarse	60 µm to 200 µm 200 µm to 600 µm 600 µm to 2 mm
Gravel (3)	Fine Medium Coarse	2 mm to 6 mm 6 mm to 20 mm 20 mm to 60 mm
Cobbles (3)		60 mm to 200 mm
Boulders (3)		> 200 mm

Where a soil contains an appropriate amount of secondary material, the name includes each of the secondary components (greater than 12%) in increasing order of significance, eg sandy silty clay.

Minor components of a soil are included in the description by means of the terms “some” and “trace” as defined in Table E1.2.2.

TABLE E1.2.2 - MINOR SOIL COMPONENTS

TERM	DESCRIPTION	APPROXIMATE PROPORTION (%)
Trace	presence just detectable, little or no influence on soil properties	0-5
Some	presence easily detectable, little influence on soil properties	5-12

The USC group symbols should be included with each soil description as shown in Table E1.2.3

TABLE E1.2.3 - SOIL GROUP SYMBOLS

SOIL TYPE	PREFIX
Gravel	G
Sand	S
Silt	M
Clay	C
Organic	O
Peat	Pt

The group symbols are combined with qualifiers which indicate grading, plasticity or secondary components as shown on Table E1.2.4

TABLE E1.2.4 - SOIL GROUP QUALIFIERS

SUBGROUP	SUFFIX
Well graded	W
Poorly Graded	P
Silty	M
Clayey	C
Liquid Limit <50% - low to medium plasticity	L
Liquid Limit >50% - low to medium plasticity	H

(b) Grading

"Well graded" Good representation of all particle sizes from the largest to the smallest.

"Poorly graded" One or more intermediate sizes poorly represented

"Gap graded" One or more intermediate sizes absent

"Uniformly graded" Essentially single size material.

(c) Particle shape and texture

The shape and surface texture of the coarse grained particles should be described.

Angularity may be expressed as "rounded", "sub-rounded", "sub-angular" or "angular".

Particle **form** can be "equidimensional", "flat" or elongate".

Surface texture can be "glassy", "smooth", "rough", pitted" or striated".

(d) Colour

The colour of the soil should be described in the moist condition using simple terms such as:

Black White Grey Red
Brown Orange Yellow Green
Blue

These may be modified as necessary by "light" or "dark". Borderline colours may be described as a combination of two colours, eg. red-brown.

For soils that contain more than one colour terms such as:

- Speckled Very small (<10 mm dia) patches
- Mottled Irregular
- Blotched Large irregular (>75 mm dia)
- Streaked Randomly oriented streaks

(e) Minor Components

Secondary and minor components should be individually described in a similar manner to the dominant component.

E1.3 ***S****oil Condition*

(a) Moisture

Soil moisture condition is described as "dry", "moist" or "wet".

The moisture categories are defined as:
Dry (D) - Little or no moisture evident. Soils are running.
Moist (M) - Darkened in colour with cool feel. Granular soil particles tend to adhere. No free water evident upon remoulding of cohesive soils.

In addition the moisture content of cohesive soils can be estimated in relation to their liquid or plastic limit.

(b) Consistency

Estimates of the consistency of a clay or silt soil may be made from manual examination, hand penetrometer test, SPT results or from laboratory tests to determine undrained shear or unconfined compressive strengths. The classification of consistency is defined in Table E1.3.1.

TABLE E1.3.1 - CONSISTENCY OF FINE-GRAINED SOILS

TERM	UNCONFINED STRENGTH (kPa)	FIELD IDENTIFICATION
Very Soft	<25	Easily penetrated by fist. Sample exudes between fingers when squeezed in the fist.
Soft	25 – 50	Easily moulded in fingers. Easily penetrated 50 mm by thumb.
Firm	50 – 100	Can be moulded by strong pressure in the fingers. Penetrated only with great effort.
Stiff	100 – 200	Cannot be moulded in fingers. Indented by thumb but penetrated only with great effort.
Very Stiff	200 – 400	Very tough. Difficult to cut with knife. Readily indented with thumb nail.
Hard	>400	Brittle, can just be scratched with thumb nail. Tends to break into fragments.

Unconfined compressive strength as derived by a hand penetrometer can be taken as approximately double the undrained shear strength ($q_u = 2\ c_u$).

(c) Density Index

The insitu density index of granular soils can be assessed from the results of SPT or cone penetrometer tests. Density index should not be estimated visually.

TABLE E1.3.2 - DENSITY OF GRANULAR SOILS

TERM	SPT N VALUE	STATIC CONE VALUE q_c (MPa)	DENSITY INDEX (%)
Very Loose	0 – 3	0 - 2	0 - 15
Loose	3 – 8	2 - 5	15 - 35
Medium Dense	8 – 25	5 - 15	35 - 65
Dense	25 – 42	15 - 20	65 - 85
Very Dense	>42	>20	>85

E1.4 Soil Structure

(a) Zoning

A sample may consist of several zones differing in colour, grain size or other properties. Terms to classify these zones are:

Layer - continuous across exposure or sample
Lens - discontinuous with lenticular shape
Pocket - irregular inclusion
Each zone should be described, their distinguishing features, and the nature of the interzone boundaries.

(b) Defects

Defects which are present in the sample can include:

- fissures
- roots (containing organic matter)
- tubes (hollow)
- casts (infilled)

Defects should be described giving details of dimensions and frequency. Fissure orientation, planarity, surface condition and infilling should be noted. If there is a tendency to break into blocks, block dimensions should be recorded

E1.5 Soil Origin

Information which may be interpretative but which may contribute to the usefulness of the material description should be included. The most common interpreted feature is the origin of the soil. The assessment of the probable origin is based on the soil material description, soil structure and its relationship to other soil and rock materials.

Common terms used are:

“Residual Soil” - Material which appears to have been derived by weathering from the underlying rock. There is no evidence of transport.

“Colluvium” - Material which appears to have been transported from its original location. The method of movement is usually the combination of gravity and erosion.

“Landslide Debris” - An extreme form of colluvium where the soil has been transported by mass movement. The material is obviously distributed and contains distinct defects related to the slope failure.

“Alluvium” - Material which has been transported essentially by water. Usually associated with former stream activity.

“Fill” - Material which has been transported and placed by man. This can range from natural soils which have been placed in a controlled manner in engineering construction to dumped waste material. A description of the constituents should include an assessment of the method of placement.

E1.6 Fine Grained Soils

The physical properties of fine grained soils are dominated by silts and clays.

The definition of clay and silt soils is governed by their Atterberg Limits. Clay soils are characterised by the properties of cohesion and plasticity with cohesion defines as the ability to deform without rupture. Silts exhibit cohesion but have low plasticity or are non-plastic.

The field characteristics of clay soils include:

- dry lumps have appreciable dry strength and cannot be powdered
- volume changes occur with moisture content variation
- feels smooth when moist with a greasy appearance when cut.

The field characteristics of silt soils include:

- dry lumps have negligible dry strength and can be powdered easily
- dilatancy - an increase in volume due to shearing - is indicted by the presence of a shiny film of water after a hand sample is shaken. The water disappears upon remoulding. Very fine grained sands may also exhibit dilatancy.
- low plasticity index
- feels gritty to the teeth

E1.7 Organic Soils

Organic soils are distinguished from other soils by their appreciable content of vegetable matter, usually derived from plant remains.

The soil usually has a distinctive smell and low bulk density.

The USC system uses the symbol Pt for partly decomposed organic material. The O symbol is combined with suffixes “O” or “H” depending on plasticity.

Where roots or root fibres are present their frequency and the depth to which they are encountered should be recorded. The presence of roots or root fibres does not necessarily mean the material is an “organic material” by classification.

Coal and lignite should be described as such and not simply as organic matter.

E2 CLASSIFICATION OF ROCKS

E2.1 Uniform Rock Description

The aim of a rock description for engineering purposes is to give an indication of the expected engineering properties of the material.

In a similar manner to soil materials, the assessment of site conditions where rock is encountered has to be based on the use of a descriptive method which is uniform and repeatable. Description has to:

- provide a clear identification of the rock substance and its engineering properties, and
- include details of the features which affect the engineering properties of the rock mass.

There is no internationally accepted system for rock description but SMEC Testing Services Pty Ltd has adopted a method which incorporates terminology defined by common usage in the engineering geological profession. Most feature definitions are as recommended by the International Society of Rock Mechanics and by the Standards Association of Australia.

For uniform presentation the different features are described in order:

Rock Substance

- NAME (in block letters)
- Mineralogy
- Grain Size
- Colour
- Fabric
- Strength
- Weathering/Alteration

Rock Mass

- Defect type
- Defect orientation
- Defect features
- Defect spacing

E2.2 Rock Substance

(a) Rock name

Each rock type has a specific name which is based on:

- mineralogy
- grain size
- fabric
- origin

The only method of determining the precise rock name is by thin section petrography.

Field identification of rocks for engineering purposes should be based on the use of common, easily understood, simple, geological names. In many cases knowledge of the precise name is of little consequence in the assessment of site conditions. If required the "field name" can be qualified by reference to a petrographic report. Reference to local geological reports often provides information on the rock types which may be expected.

(b) Mineralogy

The rock description should include the identification of the prominent minerals. This identification is usually restricted to the more common minerals in medium and coarse grained rocks.

(c) Grain Size

Rock material descriptions should include general grouping of the size of the predominant mineral grains as defined in Table E2.2.1. The maximum size, or size range, of the larger mineral grains or rock fragments should be recorded.

TABLE E2.2.1. - GRAIN SIZE GROUPS

TERM	GRAIN SIZE (mm)
Very Coarse	>60
Coarse	2 – 60
Medium	0.06 – 2
Fine	0.002 - 0.06
Very Fine	<0.002
Glassy	

(d) Colour

The colour of the rock should be described in the moist condition using simple terms such as:

Black White Grey Red
Brown Orange Yellow Green
Blue

These may be modified as necessary by "light" or "dark". Borderline colours may be described by a combination of two colours, eg: grey-blue.

(e) Fabric

The fabric of a rock includes all the features of texture and structure, though the term refers specifically to the arrangement of the constituent grains or crystals in a rock. The fabric can provide an indication of the mode of formation of the rock:

- in sedimentary rocks bedding indicates depositional conditions,
- in igneous rocks the texture indicates the rate of cooling, and
- in metamorphic rocks the foliation indicates the stress conditions

Descriptions of fabric should include structure orientation, either with reference to North and horizontal, or to a plane normal to the core axis.

Tables E2.2.2, E2.2.3 and E2.2.4 list common textural features of sedimentary, igneous and metamorphic rocks with the subdivision of stratification spacing in Table E2.2.5.

TABLE E2.2.2 - COMMON STRUCTURES IN IGNEOUS ROCKS

STRATIFICATION (Planar)	STRATIFICATION (Irregular)
Bedding	Washout
Cross Bedding	Slump Structure
Graded Bedding	Shale Breccia
Lamination	

TABLE E2.2.3 - COMMON STRUCTURES IN IGNEOUS ROCKS

	FINE GRAINED ROCKS	COARSE GRAINED ROCKS
Uniform Grain Size	Massive	Massive
	Flow Banded	Granitic
	Vesicular	Pegmatitic
Different Grain Size	Porphyritic	Porphyritic

TABLE E.2.2.4 - COMMON STRUCTURES IN METAMORPHIC ROCKS

FINE GRAINED ROCKS	COARSE GRAINED ROCKS
Slatey Cleavage	Granoblastic
Spotted	Porphyroblastic
Hornsfelsic	Lincated
Foliated	Gneissic
Mylonitic	Mylonitic

TABLE E2.2.5 - STRATIFICATION SPACING

TERM	SEPARATION (mm)
Very Thickly Bedded	>2000
Thickly Bedded	600 - 2000
Medium Bedded	200 - 600
Thinly Bedded	60 - 200
Very Thinly Bedded	20 - 60
Laminated	6 - 20
Thinly Laminated	<6

(f) Strength

Substance strength is one of the most important engineering features of a rock and every description should include at least an estimate of the rock strength class of the material. This estimate can be calibrated by test results, either by Point Loan Strength Index or by Unconfined Compressive Strength.

The rock strength class in As 1726-1981 is defined by Point Loan Strength Index I_s,(50). The relationship between Point Loan and Unconfined Strength is commonly assumed to be about 20, but can range from 4 (in some carbonate rocks) to 40 (in some igneous rocks). It is necessary to confirm the relationship for each rock type and project. classification should be based on material at field moisture content, as some rocks give a significantly higher strength when tested dry.

Table E2.2.6 defines the rock strength classes, with indicative field tests listed in Table E2.2.7 which assist in classification when testing equipment is not available.

TABLE E2.2.6 - CLASSIFICATION OF ROCK STRENGTH

SYMBOL	TERM	POINT LOAD STRENGTH (MPa)	APPROX Qu (MPa)
EL	Extremely low	<0.03	<1
VL	very low	0.03 - 0.1	1 - 3
L	Low	0.1 - 0.3	3 - 10
M	Medium	0.3 - 1	10 - 30
H	High	1 - 3	30 - 70
VH	very high	3 - 10	70 - 200
EH	Extremely high	>10	>200

TABLE E2.2.7 - FIELD TESTS FOR ROCK STRENGTH CLASSIFICATION

STRENGTH CLASS	FIELD TEST
Extremely Low	Indented by thumb nail with difficulty
Very Low	Scratched by thumb nail
Low	Easily broken by hand or pared with a knife
Medium	Broken by hand or scraped with a knife
High	Broken in hand by firm hammer blows
Very High	Broken against solid object with several hammer blow
Extremely High	Difficult to break against solid object with several hammer blows

(g) Weathering/Alteration

In addition to the description of rock substance as examined, an assessment is required of the extent to which the original rock material has been affected by subsequent events. The usual processes are:

- Weathering - Decomposition due to the effect of surface or near surface activities
- Alteration - Chemical modification by the action of materials originating from within the mantle below.

The classification of weathering/alteration presented in Table E2.2.8 is based on the extent/degree to which the original rock substance has been affected. This classification has little engineering significance, as the properties of the rock as examined may bear no relationship to the properties of the fresh rock.

TABLE E2.2.8 - CLASSIFICATION OR ROCK WEATHERING/ALTERATION

TERMS	DEFINITION
Fresh (Fr)	Rock substance unaffected.
Fresh Stained (FR St)	Rock substance unaffected. Staining of defect surfaces.
Slightly (SW)	Partial staining or discolouration of rock substance.
Moderately (MW)	Staining or discolouration extends throughout the whole rock substance.
Highly (HW)	Rock substance partly decomposed.
Completely (CW)	Rock substance entirely decomposed.

E2.3 Rock Mass

The engineering properties of rock mass reflect the effect which the presence of defects has on the properties of the rock substance. Description of the rock mass properties consists of supplementing the description covered by Section E2.2 with data on the defects which are present.

(a) Defect type

The different defect types are described in Table E2.3.1.

(b) Defect orientation

Descriptions of defects should include orientation, either of individual fractures or of groups of fractures. Orientation should be with reference to North and horizontal, or to a plane normal to the core axis.

TABLE E2.3.1 - ROCK DEFECT TYPES

TYPE	SYMBOL	DESCRIPTION
Parting	Pt	A defect parallel or subparallel to a layered arrangement of mineral grains or micro-fractures which has caused planar anistrophy in the rock substance.
Joint	Jt	A defect across which the rock substance has little tensile strength and is not related to textural or structural features with the rock substance.
Sheared Zone	SZ	A zone with roughly parallel planar boundaries or rock substance containing closely spaced, often slickensided, joints.
Crushed Zone	CZ	A zone with roughly parallel planar boundaries of rock substance composed of disoriented, usually angular, fragments of rock.
Seam	Sm	A zone with roughly parallel boundaries infilled by soil or decomposed rock.

(c) Defect features

The character of a defect is described by its continuity, planarity, surface roughness, width, and infilling.

Continuity In outcrop the extent of a joint, bedding plane or similar defect both along and across the strike can be measured. In core, continuity measurement is restricted to defects nearly parallel to the core axis.

Planarity Described as “Planar”, “Irregular”, “Curved” or “Undulose”.

Roughness Described as “Rough”, “Smooth”, “Polished” or “Slickensided”.

Width Measured in millimetres normal to the plane of the defect

Infilling Described as “Clean”, “Stained”, “Veneer” (<1 mm) or “Infill” (>1 mm). The coating or infilling material should be identified.

(d) Defect spacing

The spacing of defects, particularly where they occur in parallel groups or sets, provides an indication of the rock block sizes which:

- have to be supported in the face or roof of an excavation
- will be produced by the excavation operation.

It is preferable to provide measured data but discontinuity spacing is grouped as shown in Table E2.3.2.

TABLE E2.3.2 - DISCONTINUITY SPACING

DESCRIPTION	SPACING (mm)
Extremely Widely Spaced	>6000
Very Widely Spaced	2000 - 6000
Widely Spaced	600 - 2000
Medium Spaced	200 - 600
Closely Spaced	60 - 200
Very Closely Spaced	20 - 60
Extremely Closely Spaced	<20

E3. DESCRIPTION OF WELL CONSTRUCTION, PID AND GROUNDWATER SYMBOLS

TABLE E3.1 – BORE CONSTRUCTION DETAILS

SHADING / SYMBOL	DESCRIPTION
	Cement-Based Grout
	Bentonite Seal
	Sand Filter
	Borehole Cuttings
	Class 18 PVC casing
	Class 18 PVC Slotted Screen
	End Caps
	Vapour Probe Tip
	Teflon Tubing

TABLE E3.2 – PID SYMBOLS

SYMBOL	MEANING
I	Insitu
A	Above Soil
H	Headspace

TABLE E3.3 – WATERTABLE SYMBOLS

SYMBOL	DESCRIPTION
	Standing Water Level
	Inflow
	Outflow

APPENDIX B – LABORATORY TEST RESULTS

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1615255**	Page	: 1 of 13
Client	: **SMEC TESTING SERVICES PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: CARSTEN MATTHAI	Contact	:
Address	: P O BOX 6989 WETHERILL PARK NSW, AUSTRALIA 2164	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 21024	Date Samples Received	: 13-Jul-2016 14:45
Order number	: 13160	Date Analysis Commenced	: 14-Jul-2016
C-O-C number	: 13160	Issue Date	: 21-Jul-2016 14:50
Sampler	: JK		
Site	: ----		
Quote number	: ----		
No. of samples received	: 6		
No. of samples analysed	: 6		

NATA Accredited Laboratory 825
Accredited for compliance with
ISO/IEC 17025.

NATA
WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ashesh Patel	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Shaun Spooner	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP071: Results of sample S30 have been confirmed by re-extraction and re-analysis.
- EG005T: Poor precision was obtained for Zinc on sample ES1615398 #002 due to sample heterogeneity. Results have been confirmed by re-extraction and reanalysis.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Friable Asbestos weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
  Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S28	S29	S30	S31	S32
			Client sampling date / time	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]
Compound	CAS Number	LOR	Unit	ES1615255-001	ES1615255-002	ES1615255-003	ES1615255-004	ES1615255-005
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	22.0	19.0	21.2	18.2	19.3
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	Yes	----	----
Asbestos Type	1332-21-4	-	--	-	----	Ch	----	----
Sample weight (dry)	----	0.01	g	202	----	159	----	----
APPROVED IDENTIFIER:	----	-	--	S.SPOONER	----	S.SPOONER	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos Containing Material (as 15% Asbestos in ACM >7mm)	1332-21-4	0.01	%	----	----	0.11	----	----
ø Free Fibres	----	5	Fibres	No	----	No	----	----
ø Friable Asbestos	1332-21-4	0.0004	g	<0.0004	----	0.0019	----	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	<0.001	----	0.001	----	----
ø Weight Used for % Calculation	----	0.0001	kg	0.202	----	0.159	----	----
ø Asbestos Containing Material	1332-21-4	0.1	g	----	----	1.2	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	6	8	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	14	29	16	13	8
Copper	7440-50-8	5	mg/kg	20	10	173	8	8
Lead	7439-92-1	5	mg/kg	102	16	116	19	17
Nickel	7440-02-0	2	mg/kg	13	6	30	4	<2
Zinc	7440-66-6	5	mg/kg	45	10	188	13	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.3	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	<0.1
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S28	S29	S30	S31	S32
				Client sampling date / time	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1615255-001	ES1615255-002	ES1615255-003	ES1615255-004	ES1615255-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg		----	----	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		----	----	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	----	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	----	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	----	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	<0.05	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	<0.05	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	----	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	<0.05	----	<0.05
Endrin	72-20-8	0.05	mg/kg		----	----	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	<0.05	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	<0.05	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	----	<0.2	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	<0.05	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	----	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	----	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S28	S29	S30	S31	S32
				Client sampling date / time	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1615255-001	ES1615255-002	ES1615255-003	ES1615255-004	ES1615255-005
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	----	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg		----	----	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	----	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg		----	----	<0.05	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	----	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	<0.05	----	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	<0.5	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	<0.5	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	<0.5	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	<1	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	<0.5	----	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	<0.5	----	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	<0.5	----	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	<0.5	----	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	<0.5	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	<0.5	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	<0.5	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		----	----	<2	----	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		**2.5**	<0.5	**2.3**	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		**0.5**	<0.5	**0.5**	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**3.6**	<0.5	**3.9**	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		**3.4**	<0.5	**3.8**	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		**1.6**	<0.5	**1.8**	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S28	S29	S30	S31	S32
				Client sampling date / time	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1615255-001	ES1615255-002	ES1615255-003	ES1615255-004	ES1615255-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		**1.5**	<0.5	**1.7**	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**1.8**	<0.5	**2.4**	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		**0.8**	<0.5	**0.8**	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**1.5**	<0.5	**1.8**	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		**0.6**	<0.5	**0.9**	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		**0.8**	<0.5	**1.3**	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**18.6**	<0.5	**21.2**	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**2.0**	<0.5	**2.4**	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**2.2**	**0.6**	**2.7**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**2.5**	**1.2**	**2.9**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	**160**	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	**160**	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S28	S29	S30	S31	S32
				Client sampling date / time	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]	[08-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1615255-001	ES1615255-002	ES1615255-003	ES1615255-004	ES1615255-005
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	77.0	----	82.0
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	113	----	122
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	99.3	----	95.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		91.0	91.4	83.7	----	85.4
2-Chlorophenol-D4	93951-73-6	0.5	%		88.0	88.7	74.5	----	81.6
2.4.6-Tribromophenol	118-79-6	0.5	%		77.5	74.0	27.6	----	69.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		83.8	85.4	79.2	----	79.2
Anthracene-d10	1719-06-8	0.5	%		103	104	95.2	----	98.0
4-Terphenyl-d14	1718-51-0	0.5	%		95.4	96.4	89.5	----	90.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		108	101	105	----	105
Toluene-D8	2037-26-5	0.2	%		114	102	107	----	106
4-Bromofluorobenzene	460-00-4	0.2	%		112	96.8	96.9	----	104

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S33	----	----	----	----
			Client sampling date / time	[08-Jul-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1615255-006	--------	--------	--------	--------
				Result	----	----	----	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	**8.1**	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	**16.2**	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	----	----
Asbestos Type	1332-21-4	-	--	----	----	----	----	----
Sample weight (dry)	----	0.01	g	----	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	----	----	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø **Asbestos Containing Material (as 15% Asbestos in ACM >7mm)**	1332-21-4	0.01	%	----	----	----	----	----
ø **Free Fibres**	----	5	Fibres	----	----	----	----	----
ø **Friable Asbestos**	1332-21-4	0.0004	g	----	----	----	----	----
ø **Friable Asbestos (as Asbestos in Soil)**	1332-21-4	0.001	% (w/w)	----	----	----	----	----
ø **Weight Used for % Calculation**	----	0.0001	kg	----	----	----	----	----
ø **Asbestos Containing Material**	1332-21-4	0.1	g	----	----	----	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	**350**	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	**1250**	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	----	----	----	----	----
Chromium	7440-47-3	2	mg/kg	----	----	----	----	----
Copper	7440-50-8	5	mg/kg	----	----	----	----	----
Lead	7439-92-1	5	mg/kg	----	----	----	----	----
Nickel	7440-02-0	2	mg/kg	----	----	----	----	----
Zinc	7440-66-6	5	mg/kg	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S33	----	----	----	----
				Client sampling date / time	[08-Jul-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1615255-006	--------	--------	--------	--------
					Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	----
^ **Total Chlordane (sum)**	----	0.05	mg/kg		----	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	----	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S33	----	----	----	----
				Client sampling date / time	[08-Jul-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1615255-006	--------	--------	--------	--------
					Result	----	----	----	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Fenthion	55-38-9	0.05	mg/kg		----	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg		----	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg		----	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		----	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S33	----	----	----	----
				Client sampling date / time	[08-Jul-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1615255-006	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		----	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		----	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		----	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		----	----	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S33	----	----	----	----
				Client sampling date / time	[08-Jul-2016]	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1615255-006	--------	--------	--------	--------
					Result	----	----	----	----
EP080: BTEXN - Continued									
Naphthalene	91-20-3	1	mg/kg		----	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		----	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	S28 - [08-Jul-2016]	Mid brown clay soil.
EA200: Description	S30 - [08-Jul-2016]	Mid grey clay soil with one piece of bonded asbestos cement sheeting approx 25 x 15 x 5 mm and one fragment of friable asbestos cement sheeting approx 2 x 2 x 1 mm.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1614925**	Page	: 1 of 28
Client	: **SMEC TESTING SERVICES PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: CARSTEN MATTHAI	Contact	:
Address	: P O BOX 6989 WETHERILL PARK NSW, AUSTRALIA 2164	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 21024	Date Samples Received	: 08-Jul-2016 15:15
Order number	: 13153	Date Analysis Commenced	: 11-Jul-2016
C-O-C number	: ----	Issue Date	: 15-Jul-2016 13:56
Sampler	: JK		
Site	: ----		
Quote number	: ----		
No. of samples received	: 25		
No. of samples analysed	: 24		

NATA Accredited Laboratory 825
Accredited for compliance with
ISO/IEC 17025.

NATA
WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Gerrad Morgan	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EP068: Positive result has been confirmed by re-extraction and re-analysis.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Friable Asbestos weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
  Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S1	S2	S3	S4	S5
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-001	ES1614925-002	ES1614925-003	ES1614925-004	ES1614925-005
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		----	----	----	5.3	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%		4.1	4.0	14.0	8.6	15.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	----	----	----
Asbestos Type	1332-21-4	-	--		-	----	----	----	----
Sample weight (dry)	----	0.01	g		589	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		G.MORGAN	----	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Free Fibres	----	5	Fibres		No	----	----	----	----
ø Friable Asbestos	1332-21-4	0.0004	g		<0.0004	----	----	----	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)		<0.001	----	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		0.589	----	----	----	----
ED040S : Soluble Sulfate by ICPAES									
Sulfate as SO4 2-	14808-79-8	10	mg/kg		----	----	----	120	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	10	mg/kg		----	----	----	40	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	41	9	8
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		48	7	12	10	36
Copper	7440-50-8	5	mg/kg		78	56	76	60	16
Lead	7439-92-1	5	mg/kg		24	46	1040	118	28
Nickel	7440-02-0	2	mg/kg		85	61	6	16	19
Zinc	7440-66-6	5	mg/kg		82	41	239	86	41
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	0.2	0.6	0.4	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S1	S2	S3	S4	S5
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-001	ES1614925-002	ES1614925-003	ES1614925-004	ES1614925-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		----	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg		----	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg		----	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S1	S2	S3	S4	S5
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-001	ES1614925-002	ES1614925-003	ES1614925-004	ES1614925-005
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	<0.5	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	<0.5	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	<0.5	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	<0.5	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	<0.5	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	<0.5	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	<0.5	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	<0.5	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	<0.5	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		----	<2	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	**0.7**	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		**0.8**	<0.5	----	**8.1**	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	**2.0**	----
Fluoranthene	206-44-0	0.5	mg/kg		**1.5**	<0.5	----	**10.6**	----
Pyrene	129-00-0	0.5	mg/kg		**1.7**	<0.5	----	**10.9**	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.8**	<0.5	----	**5.3**	----
Chrysene	218-01-9	0.5	mg/kg		**0.8**	<0.5	----	**5.1**	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**0.9**	<0.5	----	**5.2**	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	**2.1**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S1	S2	S3	S4	S5
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-001	ES1614925-002	ES1614925-003	ES1614925-004	ES1614925-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**0.7**	<0.5	----	**4.6**	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	**2.0**	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	**0.5**	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	**2.6**	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**7.2**	<0.5	----	**59.7**	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**0.9**	<0.5	----	**6.6**	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.2**	**0.6**	----	**6.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.5**	**1.2**	----	**6.6**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	<50	----
C15 - C28 Fraction	----	100	mg/kg		**120**	<100	----	**210**	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		**120**	<50	----	**210**	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg		**160**	<100	----	**250**	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**160**	<50	----	**250**	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	<1	----
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S1	S2	S3	S4	S5
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-001	ES1614925-002	ES1614925-003	ES1614925-004	ES1614925-005
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**80.1**	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	**111**	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	**79.7**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**90.9**	**84.1**	----	**94.1**	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**87.7**	**80.7**	----	**90.2**	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**105**	**68.7**	----	**109**	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**85.4**	**78.4**	----	**84.1**	----
Anthracene-d10	1719-06-8	0.5	%		**93.2**	**82.8**	----	**98.1**	----
4-Terphenyl-d14	1718-51-0	0.5	%		**89.1**	**89.4**	----	**89.4**	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**106**	**116**	----	**102**	----
Toluene-D8	2037-26-5	0.2	%		**124**	**106**	----	**106**	----
4-Bromofluorobenzene	460-00-4	0.2	%		**107**	**102**	----	**105**	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S6	S7	S8	S9	S10
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[05-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-006	ES1614925-007	ES1614925-008	ES1614925-009	ES1614925-010
					Result	Result	Result	Result	Result
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		----	----	----	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%		11.2	9.5	18.4	16.6	6.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	No	----	----
Asbestos Type	1332-21-4	-	--		-	----	-	----	----
Sample weight (dry)	----	0.01	g		362	----	243	----	----
APPROVED IDENTIFIER:	----	-	--		G.MORGAN	----	G.MORGAN	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Free Fibres	----	5	Fibres		No	----	No	----	----
ø Friable Asbestos	1332-21-4	0.0004	g		<0.0004	----	<0.0004	----	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)		<0.001	----	<0.001	----	----
ø Weight Used for % Calculation	----	0.0001	kg		0.362	----	0.243	----	----
ED040S : Soluble Sulfate by ICPAES									
Sulfate as SO4 2-	14808-79-8	10	mg/kg		----	----	----	----	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	10	mg/kg		----	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		13	8	<5	10	<5
Cadmium	7440-43-9	1	mg/kg		4	2	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		23	16	9	38	16
Copper	7440-50-8	5	mg/kg		167	239	12	14	58
Lead	7439-92-1	5	mg/kg		126	356	13	42	35
Nickel	7440-02-0	2	mg/kg		96	22	3	5	19
Zinc	7440-66-6	5	mg/kg		199	240	11	45	39
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S6	S7	S8	S9	S10
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[05-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-006	ES1614925-007	ES1614925-008	ES1614925-009	ES1614925-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S6	S7	S8	S9	S10
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[05-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-006	ES1614925-007	ES1614925-008	ES1614925-009	ES1614925-010
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	**1.4**	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	**0.5**	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	**0.8**	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		**1.8**	**16.1**	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	**4.2**	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**2.0**	**26.0**	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg		**2.0**	**28.8**	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.9**	**15.1**	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg		**0.9**	**15.0**	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**1.2**	**19.0**	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		**0.5**	**6.9**	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S6	S7	S8	S9	S10
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[05-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-006	ES1614925-007	ES1614925-008	ES1614925-009	ES1614925-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**1.1**	**17.0**	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		**0.6**	**7.5**	----	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	**1.9**	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		**0.8**	**9.9**	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**11.8**	**170**	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**1.4**	**24.0**	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.7**	**24.0**	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.9**	**24.0**	----	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	**900**	----	----	<100
C29 - C36 Fraction	----	100	mg/kg		<100	**670**	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	**1570**	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		**120**	**1280**	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	**650**	----	----	**150**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**120**	**1930**	----	----	**150**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	<1
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S6	S7	S8	S9	S10
				Client sampling date / time	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[04-Jul-2016]	[05-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-006	ES1614925-007	ES1614925-008	ES1614925-009	ES1614925-010
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		87.2	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		111	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		99.3	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		95.0	92.4	----	----	96.8
2-Chlorophenol-D4	93951-73-6	0.5	%		90.2	88.2	----	----	94.0
2.4.6-Tribromophenol	118-79-6	0.5	%		101	106	----	----	104
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		86.5	82.0	----	----	88.2
Anthracene-d10	1719-06-8	0.5	%		101	95.4	----	----	103
4-Terphenyl-d14	1718-51-0	0.5	%		90.2	87.7	----	----	70.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		123	128	----	----	124
Toluene-D8	2037-26-5	0.2	%		106	110	----	----	122
4-Bromofluorobenzene	460-00-4	0.2	%		111	119	----	----	122

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S12	S13	S14	S15	S16
			Client sampling date / time	[05-Jul-2016]	[05-Jul-2016]	[05-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]
Compound	CAS Number	LOR	Unit	ES1614925-011	ES1614925-012	ES1614925-013	ES1614925-014	ES1614925-015
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	4.7	14.4	16.9	24.3	18.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	No	----
Asbestos Type	1332-21-4	-	--	----	----	----	-	----
Sample weight (dry)	----	0.01	g	----	----	----	177	----
APPROVED IDENTIFIER:	----	-	--	----	----	----	G.MORGAN	----
EA200N: Asbestos Quantification (non-NATA)								
ø Free Fibres	----	5	Fibres	----	----	----	No	----
ø Friable Asbestos	1332-21-4	0.0004	g	----	----	----	<0.0004	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	----	----	----	<0.001	----
ø Weight Used for % Calculation	----	0.0001	kg	----	----	----	0.177	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	8	<5	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	23	5	13	12	24
Copper	7440-50-8	5	mg/kg	52	22	13	87	28
Lead	7439-92-1	5	mg/kg	27	20	19	56	116
Nickel	7440-02-0	2	mg/kg	28	5	3	46	12
Zinc	7440-66-6	5	mg/kg	42	52	8	251	52
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	0.3	0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S12	S13	S14	S15	S16
				Client sampling date / time	[05-Jul-2016]	[05-Jul-2016]	[05-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-011	ES1614925-012	ES1614925-013	ES1614925-014	ES1614925-015
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	**0.17**	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	----	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	**0.17**	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	<0.2	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S12	S13	S14	S15	S16
				Client sampling date / time	[05-Jul-2016]	[05-Jul-2016]	[05-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-011	ES1614925-012	ES1614925-013	ES1614925-014	ES1614925-015
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	<0.05	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	----	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	----	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	----	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	----	<0.5	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	----	<0.5	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	----	<0.5	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	----	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	----	<0.5	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	----	<0.5	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	----	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	----	<2	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	<0.5	**0.9**
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	<0.5	**0.9**
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	<0.5	**0.7**
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	<0.5	**0.8**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	<0.5	**1.3**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S12	S13	S14	S15	S16
				Client sampling date / time	[05-Jul-2016]	[05-Jul-2016]	[05-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-011	ES1614925-012	ES1614925-013	ES1614925-014	ES1614925-015
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	<0.5	**1.0**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	<0.5	**0.6**
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	<0.5	**0.8**
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	<0.5	**7.0**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	<0.5	**1.3**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	**0.6**	**1.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	**1.2**	**1.8**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		**110**	----	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**110**	----	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	----	<1	<1
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S12	S13	S14	S15	S16
				Client sampling date / time	[05-Jul-2016]	[05-Jul-2016]	[05-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-011	ES1614925-012	ES1614925-013	ES1614925-014	ES1614925-015
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		77.7	----	----	85.2	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		103	----	----	96.9	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		81.0	----	----	90.5	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		73.8	----	----	79.0	80.2
2-Chlorophenol-D4	93951-73-6	0.5	%		72.0	----	----	75.8	78.7
2.4.6-Tribromophenol	118-79-6	0.5	%		85.0	----	----	52.3	94.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		82.0	----	----	84.9	92.4
Anthracene-d10	1719-06-8	0.5	%		98.6	----	----	95.8	104
4-Terphenyl-d14	1718-51-0	0.5	%		85.8	----	----	90.3	92.9
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		92.5	----	----	105	108
Toluene-D8	2037-26-5	0.2	%		116	----	----	90.4	104
4-Bromofluorobenzene	460-00-4	0.2	%		102	----	----	85.9	107

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S17	S19	S20	S21	S22
			Client sampling date / time	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[07-Jul-2016]
Compound	CAS Number	LOR	Unit	ES1614925-016	ES1614925-018	ES1614925-019	ES1614925-020	ES1614925-021
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	8.8	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	16.7	14.9	32.8	19.1	20.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	No	----	No
Asbestos Type	1332-21-4	-	--	----	----	-	----	-
Sample weight (dry)	----	0.01	g	----	----	176	----	270
APPROVED IDENTIFIER:	----	-	--	----	----	G.MORGAN	----	G.MORGAN
EA200N: Asbestos Quantification (non-NATA)								
ø Free Fibres	----	5	Fibres	----	----	No	----	No
ø Friable Asbestos	1332-21-4	0.0004	g	----	----	<0.0004	----	<0.0004
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	----	----	<0.001	----	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	----	----	0.176	----	0.270
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	70	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	60	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	----	7	<5	7
Cadmium	7440-43-9	1	mg/kg	<1	----	2	<1	<1
Chromium	7440-47-3	2	mg/kg	11	----	11	11	12
Copper	7440-50-8	5	mg/kg	13	----	89	9	23
Lead	7439-92-1	5	mg/kg	15	----	101	10	28
Nickel	7440-02-0	2	mg/kg	3	----	84	<2	9
Zinc	7440-66-6	5	mg/kg	9	----	222	7	37
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S17	S19	S20	S21	S22
				Client sampling date / time	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-016	ES1614925-018	ES1614925-019	ES1614925-020	ES1614925-021
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		----	----	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg		----	----	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	<0.05	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg		----	----	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	<0.2	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	<0.05	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		----	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	<0.2	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S17	S19	S20	S21	S22
				Client sampling date / time	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-016	ES1614925-018	ES1614925-019	ES1614925-020	ES1614925-021
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	<0.05	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	<0.5	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	<1	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	<0.5	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	<0.5	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	<0.5	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	<0.5	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	<0.5	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	<0.5	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	<0.5	----	----
Pentachlorophenol	87-86-5	2	mg/kg		----	----	<2	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**0.8**	----	**0.9**	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		**0.8**	----	**1.0**	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.6**	----	**0.5**	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		**0.5**	----	**0.5**	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**0.7**	----	**0.7**	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S17	S19	S20	S21	S22
				Client sampling date / time	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-016	ES1614925-018	ES1614925-019	ES1614925-020	ES1614925-021
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**0.6**	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	**0.6**	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**4.0**	----	**4.2**	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**0.7**	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.0**	----	**0.7**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.3**	----	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	**130**	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	**130**	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	**180**	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	**180**	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	<1
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S17	S19	S20	S21	S22
				Client sampling date / time	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[06-Jul-2016]	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1614925-016	ES1614925-018	ES1614925-019	ES1614925-020	ES1614925-021
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	92.1	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	125	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	112	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		78.3	----	90.2	94.1	87.2
2-Chlorophenol-D4	93951-73-6	0.5	%		93.6	----	88.7	92.2	83.3
2.4.6-Tribromophenol	118-79-6	0.5	%		89.5	----	92.2	90.9	80.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		90.8	----	85.8	88.5	86.0
Anthracene-d10	1719-06-8	0.5	%		103	----	103	100	98.4
4-Terphenyl-d14	1718-51-0	0.5	%		110	----	89.3	89.9	87.8
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		101	----	114	130	120
Toluene-D8	2037-26-5	0.2	%		102	----	94.7	112	103
4-Bromofluorobenzene	460-00-4	0.2	%		101	----	102	118	110

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S23	S25	S26	S27	----
				Client sampling date / time	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1614925-022	ES1614925-023	ES1614925-024	ES1614925-025	--------
					Result	Result	Result	Result	----
EA002 : pH (Soils)									
pH Value	----	0.1	pH Unit		----	----	----	7.8	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%		21.4	18.8	22.2	20.2	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		----	----	----	----	----
Asbestos Type	1332-21-4	-	--		----	----	----	----	----
Sample weight (dry)	----	0.01	g		----	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		----	----	----	----	----
EA200N: Asbestos Quantification (non-NATA)									
ø Free Fibres	----	5	Fibres		----	----	----	----	----
ø Friable Asbestos	1332-21-4	0.0004	g		----	----	----	----	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)		----	----	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg		----	----	----	----	----
ED040S : Soluble Sulfate by ICPAES									
Sulfate as SO4 2-	14808-79-8	10	mg/kg		----	----	----	180	----
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	10	mg/kg		----	----	----	140	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		8	5	<5	----	----
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg		15	10	10	----	----
Copper	7440-50-8	5	mg/kg		18	26	7	----	----
Lead	7439-92-1	5	mg/kg		25	36	12	----	----
Nickel	7440-02-0	2	mg/kg		6	12	<2	----	----
Zinc	7440-66-6	5	mg/kg		22	52	6	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S23	S25	S26	S27	----
				Client sampling date / time	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1614925-022	ES1614925-023	ES1614925-024	ES1614925-025	--------
					Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S23	S25	S26	S27	----
				Client sampling date / time	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1614925-022	ES1614925-023	ES1614925-024	ES1614925-025	--------
					Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S23	S25	S26	S27	----
				Client sampling date / time	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1614925-022	ES1614925-023	ES1614925-024	ES1614925-025	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S23	S25	S26	S27	----
				Client sampling date / time	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	[07-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1614925-022	ES1614925-023	ES1614925-024	ES1614925-025	--------
					Result	Result	Result	Result	----
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**91.4**	**95.2**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**86.9**	**90.6**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**87.8**	**77.5**	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**85.0**	**90.6**	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**99.6**	**100**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**87.7**	**89.5**	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**108**	**130**	----	----	----
Toluene-D8	2037-26-5	0.2	%		**106**	**106**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**104**	**115**	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	S1 - [04-Jul-2016]	Mid grey-brown clay soil with grey rocks.
EA200: Description	S6 - [04-Jul-2016]	Mid brown clay soil.
EA200: Description	S8 - [04-Jul-2016]	Pale brown clay soil.
EA200: Description	S15 - [06-Jul-2016]	Dark grey soil.
EA200: Description	S20 - [06-Jul-2016]	Dark grey soil.
EA200: Description	S22 - [07-Jul-2016]	Mid brown clay soil.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES1616014**	Page	: 1 of 45
Client	: **SMEC TESTING SERVICES PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: C MATTHAI(STS)	Contact	:
Address	: 14/1 Cowpasture Place Wetherill Park NSW	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: ----	Date Samples Received	: 21-Jul-2016 08:30
Order number	: ----	Date Analysis Commenced	: 22-Jul-2016
C-O-C number	: ----	Issue Date	: 28-Jul-2016 14:39
Sampler	: ----		
Site	: ----		
Quote number	: ----		
No. of samples received	: 34		
No. of samples analysed	: 29		

NATA Accredited Laboratory 825
Accredited for compliance with
ISO/IEC 17025.

NATA
WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ashesh Patel	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
RICHARD TEA	Lab technician	Sydney Inorganics, Smithfield, NSW
Shaun Spooner	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Friable Asbestos weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: Negative results for vinyl tiles should be confirmed by an independent analytical technique.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
  Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S40	S41	S42	S43	S49
			Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit	ES1616014-001	ES1616014-002	ES1616014-003	ES1616014-004	ES1616014-005
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	16.5	29.2	20.8	19.1	19.1
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	Yes	----	----	No	----
Asbestos Type	1332-21-4	-	--	Ch	----	----	-	----
Sample weight (dry)	----	0.01	g	197	----	----	293	----
APPROVED IDENTIFIER:	----	-	--	S.SPOONER	----	----	S.SPOONER	----
EA200N: Asbestos Quantification (non-NATA)								
ø Free Fibres	----	5	Fibres	No	----	----	No	----
ø Friable Asbestos	1332-21-4	0.0004	g	0.0010	----	----	<0.0004	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	<0.001	----	----	<0.001	----
ø Weight Used for % Calculation	----	0.0001	kg	0.197	----	----	0.293	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	10	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	15	68	11	17	7
Copper	7440-50-8	5	mg/kg	9	66	18	14	20
Lead	7439-92-1	5	mg/kg	56	8	19	14	48
Nickel	7440-02-0	2	mg/kg	7	44	6	5	<2
Zinc	7440-66-6	5	mg/kg	25	127	14	5	15
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S40	S41	S42	S43	S49
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-001	ES1616014-002	ES1616014-003	ES1616014-004	ES1616014-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		----	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg		----	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	----	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	<0.2	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S40	S41	S42	S43	S49
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-001	ES1616014-002	ES1616014-003	ES1616014-004	ES1616014-005
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	<0.05	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	----	<0.5	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	<0.5	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	<0.5	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	<0.5	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	<0.5	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	<0.5	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	<5	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	<5	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	<5	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	<5	<5	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	<5	<5	----
Chloromethane	74-87-3	5	mg/kg		----	----	<5	<5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S40	S41	S42	S43	S49
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-001	ES1616014-002	ES1616014-003	ES1616014-004	ES1616014-005
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
Vinyl chloride	75-01-4	5	mg/kg		----	----	<5	<5	----
Bromomethane	74-83-9	5	mg/kg		----	----	<5	<5	----
Chloroethane	75-00-3	5	mg/kg		----	----	<5	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	<5	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	<0.5	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	<0.5	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	<0.5	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	<0.5	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	<0.5	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	<0.5	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	<0.5	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	<0.5	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	<0.5	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	<0.5	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	<0.5	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S40	S41	S42	S43	S49
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-001	ES1616014-002	ES1616014-003	ES1616014-004	ES1616014-005
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	<0.5	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	<0.5	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		----	----	<0.5	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	----	<1	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	----	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	----	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	----	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	----	<0.5	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	----	<0.5	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	----	<0.5	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	----	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	----	<0.5	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	----	<0.5	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	----	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg		----	----	----	<2	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S40	S41	S42	S43	S49
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-001	ES1616014-002	ES1616014-003	ES1616014-004	ES1616014-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	**0.6**	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	**1.2**	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	<50	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	<100	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	<50	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	<100	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	<50	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	<0.2	<0.2	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	----
Naphthalene	91-20-3	1	mg/kg		<1	----	<1	<1	----
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S40	S41	S42	S43	S49
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-001	ES1616014-002	ES1616014-003	ES1616014-004	ES1616014-005
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	77.5	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	97.7	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	85.8	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	89.0	87.4	----
Toluene-D8	2037-26-5	0.5	%		----	----	76.8	94.9	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	75.7	86.2	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		108	----	125	99.2	----
2-Chlorophenol-D4	93951-73-6	0.5	%		103	----	122	102	----
2.4.6-Tribromophenol	118-79-6	0.5	%		85.6	----	95.5	70.8	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		105	----	119	105	----
Anthracene-d10	1719-06-8	0.5	%		112	----	126	112	----
4-Terphenyl-d14	1718-51-0	0.5	%		117	----	120	120	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		82.3	----	80.7	86.1	----
Toluene-D8	2037-26-5	0.2	%		83.5	----	85.1	91.2	----
4-Bromofluorobenzene	460-00-4	0.2	%		81.3	----	74.4	81.0	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S50	S52	S57	S58	S53
			Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit	ES1616014-006	ES1616014-007	ES1616014-008	ES1616014-009	ES1616014-010
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	7.0	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	17.8	21.7	20.3	12.0	21.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	----	Yes
Asbestos Type	1332-21-4	-	--	----	----	----	----	Ch
Sample weight (dry)	----	0.01	g	----	----	----	----	277
APPROVED IDENTIFIER:	----	-	--	----	----	----	----	S.SPOONER
EA200N: Asbestos Quantification (non-NATA)								
ø Free Fibres	----	5	Fibres	----	----	----	----	No
ø Friable Asbestos	1332-21-4	0.0004	g	----	----	----	----	<0.0004
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	----	----	----	----	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	----	----	----	----	0.277
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	70	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	250	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	7	<5	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	10	18	18	10	22
Copper	7440-50-8	5	mg/kg	10	12	15	15	13
Lead	7439-92-1	5	mg/kg	25	16	19	11	21
Nickel	7440-02-0	2	mg/kg	4	3	2	<2	5
Zinc	7440-66-6	5	mg/kg	11	7	5	9	47
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S50	S52	S57	S58	S53
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-006	ES1616014-007	ES1616014-008	ES1616014-009	ES1616014-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S50	S52	S57	S58	S53
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-006	ES1616014-007	ES1616014-008	ES1616014-009	ES1616014-010
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	----	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	----	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	----	----	----
Chloromethane	74-87-3	5	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S50	S52	S57	S58	S53
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-006	ES1616014-007	ES1616014-008	ES1616014-009	ES1616014-010
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
Vinyl chloride	75-01-4	5	mg/kg		----	----	----	----	----
Bromomethane	74-83-9	5	mg/kg		----	----	----	----	----
Chloroethane	75-00-3	5	mg/kg		----	----	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	----	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	----	----	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	----	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S50	S52	S57	S58	S53
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-006	ES1616014-007	ES1616014-008	ES1616014-009	ES1616014-010
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	----	----	----
Bromoform	75-25-2	0.5	mg/kg		----	----	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S50	S52	S57	S58	S53
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-006	ES1616014-007	ES1616014-008	ES1616014-009	ES1616014-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	----	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	----	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	----	<100	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	----	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		----	<100	----	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	----	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	----	<1	<1
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S50	S52	S57	S58	S53
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]	[18-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-006	ES1616014-007	ES1616014-008	ES1616014-009	ES1616014-010
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	----	----	----
Toluene-D8	2037-26-5	0.5	%		----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	113	----	103	104
2-Chlorophenol-D4	93951-73-6	0.5	%		----	108	----	97.0	98.3
2.4.6-Tribromophenol	118-79-6	0.5	%		----	92.1	----	82.7	81.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	110	----	99.2	99.4
Anthracene-d10	1719-06-8	0.5	%		----	112	----	102	104
4-Terphenyl-d14	1718-51-0	0.5	%		----	123	----	111	114
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	100	----	104	120
Toluene-D8	2037-26-5	0.2	%		----	95.7	----	93.3	111
4-Bromofluorobenzene	460-00-4	0.2	%		----	86.7	----	82.4	101

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S59	S60	S54	S55	S56
			Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit	ES1616014-011	ES1616014-012	ES1616014-013	ES1616014-014	ES1616014-015
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	7.8	----	----	7.0
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	19.9	21.0	18.0	21.0	20.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	No	----	----
Asbestos Type	1332-21-4	-	--	----	----	-	----	----
Sample weight (dry)	----	0.01	g	----	----	319	----	----
APPROVED IDENTIFIER:	----	-	--	----	----	S.SPOONER	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Free Fibres	----	5	Fibres	----	----	No	----	----
ø Friable Asbestos	1332-21-4	0.0004	g	----	----	<0.0004	----	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	----	----	<0.001	----	----
ø Weight Used for % Calculation	----	0.0001	kg	----	----	0.319	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	250	----	----	110
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	320	----	----	<10
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	5	<5	<5	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	24	16	8	12	13
Copper	7440-50-8	5	mg/kg	29	24	25	10	11
Lead	7439-92-1	5	mg/kg	29	18	27	19	18
Nickel	7440-02-0	2	mg/kg	3	2	3	3	<2
Zinc	7440-66-6	5	mg/kg	22	17	18	6	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S59	S60	S54	S55	S56
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-011	ES1616014-012	ES1616014-013	ES1616014-014	ES1616014-015
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		----	<0.05	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		----	<0.05	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		----	<0.05	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		----	<0.05	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	<0.05	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	<0.05	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg		----	<0.05	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	<0.05	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	----	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	<0.05	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	<0.2	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S59	S60	S54	S55	S56
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-011	ES1616014-012	ES1616014-013	ES1616014-014	ES1616014-015
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	<0.05	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	<0.5	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	<0.5	----	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	<0.5	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	<0.5	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	<0.5	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	<0.5	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	<0.5	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	<0.5	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	<0.5	----	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	<5	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	<5	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	<5	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	<5	----	<5	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	<0.5	----	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	<0.5	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	<0.5	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	<0.5	----	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	<0.5	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	<0.5	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	<5	----	<5	----
Chloromethane	74-87-3	5	mg/kg		----	<5	----	<5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S59	S60	S54	S55	S56
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-011	ES1616014-012	ES1616014-013	ES1616014-014	ES1616014-015
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
Vinyl chloride	75-01-4	5	mg/kg		----	<5	----	<5	----
Bromomethane	74-83-9	5	mg/kg		----	<5	----	<5	----
Chloroethane	75-00-3	5	mg/kg		----	<5	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	<5	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	<0.5	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	<0.5	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	<0.5	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	<0.5	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	<0.5	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	<0.5	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	<0.5	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	<0.5	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	<0.5	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	<0.5	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	<0.5	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	<0.5	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	<0.5	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	<0.5	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	<0.5	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	<0.5	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	<0.5	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	<0.5	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	<0.5	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	<0.5	----	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	<0.5	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	<0.5	----	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	<0.5	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		----	<0.5	----	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	<0.5	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	<0.5	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	<0.5	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	<0.5	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	<0.5	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S59	S60	S54	S55	S56
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-011	ES1616014-012	ES1616014-013	ES1616014-014	ES1616014-015
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	<0.5	----	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	<0.5	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	<0.5	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	<0.5	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		----	<0.5	----	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	<1	----	<1	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	<0.5	----	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	<0.5	----	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	<0.5	----	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	----	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	<0.5	----	<0.5	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	<0.5	----	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	<0.5	----	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg		----	<2	----	<2	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	**0.8**	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	**1.8**	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	**1.8**	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	**0.9**	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	**0.9**	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	**1.0**	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S59	S60	S54	S55	S56
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-011	ES1616014-012	ES1616014-013	ES1616014-014	ES1616014-015
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	**0.9**	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	**8.1**	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	**1.1**	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**1.4**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.7**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S59	S60	S54	S55	S56
				Client sampling date / time	[18-Jul-2016]	[18-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-011	ES1616014-012	ES1616014-013	ES1616014-014	ES1616014-015
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		----	64.8	----	83.4	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	80.0	----	128	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	70.0	----	116	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	90.0	----	88.5	----
Toluene-D8	2037-26-5	0.5	%		----	92.4	----	88.4	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	83.2	----	83.8	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		103	102	104	102	105
2-Chlorophenol-D4	93951-73-6	0.5	%		99.4	96.0	99.9	98.5	100
2.4.6-Tribromophenol	118-79-6	0.5	%		85.1	82.8	78.8	69.2	81.3
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		103	94.2	100	99.8	102
Anthracene-d10	1719-06-8	0.5	%		90.0	93.6	106	104	96.1
4-Terphenyl-d14	1718-51-0	0.5	%		117	108	113	113	117
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		97.9	88.6	114	87.1	115
Toluene-D8	2037-26-5	0.2	%		89.4	88.8	101	85.0	104
4-Bromofluorobenzene	460-00-4	0.2	%		74.8	78.6	89.8	78.6	95.9

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S61	S62	S63	S65	S66
			Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit	ES1616014-016	ES1616014-017	ES1616014-018	ES1616014-019	ES1616014-020
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	7.8	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	16.6	25.6	24.4	18.7	19.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	----	----
Asbestos Type	1332-21-4	-	--	----	----	----	----	----
Sample weight (dry)	----	0.01	g	----	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	----	----	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Free Fibres	----	5	Fibres	----	----	----	----	----
ø Friable Asbestos	1332-21-4	0.0004	g	----	----	----	----	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	----	----	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg	----	----	----	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	30	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	<10	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	7	6	<5	12
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	6	5	5	11	19
Copper	7440-50-8	5	mg/kg	<5	<5	<5	6	63
Lead	7439-92-1	5	mg/kg	<5	<5	<5	9	117
Nickel	7440-02-0	2	mg/kg	<2	<2	<2	<2	45
Zinc	7440-66-6	5	mg/kg	20	6	7	<5	259
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S61	S62	S63	S65	S66
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-016	ES1616014-017	ES1616014-018	ES1616014-019	ES1616014-020
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		----	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		----	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		----	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		----	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S61	S62	S63	S65	S66
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-016	ES1616014-017	ES1616014-018	ES1616014-019	ES1616014-020
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	----	----	<0.5	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	----	<0.5	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	----	<0.5	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	----	<0.5	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	----	<0.5	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	----	<0.5	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	----	<0.5	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	----	<0.5	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	----	<0.5	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	----	<5	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	----	<5	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	----	<5	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	----	<5	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	----	<0.5	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	----	<0.5	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	----	<0.5	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	----	<0.5	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	----	<5	----
Chloromethane	74-87-3	5	mg/kg		----	----	----	<5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S61	S62	S63	S65	S66
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-016	ES1616014-017	ES1616014-018	ES1616014-019	ES1616014-020
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
Vinyl chloride	75-01-4	5	mg/kg		----	----	----	<5	----
Bromomethane	74-83-9	5	mg/kg		----	----	----	<5	----
Chloroethane	75-00-3	5	mg/kg		----	----	----	<5	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	----	<5	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	----	<0.5	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	----	<0.5	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	----	<0.5	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	----	<0.5	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	----	<0.5	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	----	<0.5	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	----	<0.5	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	----	<0.5	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	----	<0.5	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	----	<0.5	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	----	<0.5	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	----	<0.5	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	----	<0.5	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	----	<0.5	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	----	<0.5	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	----	<0.5	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	----	<0.5	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	----	<0.5	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	----	<0.5	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	----	<0.5	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	----	<0.5	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	----	<0.5	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	----	<0.5	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	----	<0.5	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	----	<0.5	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	----	<0.5	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S61	S62	S63	S65	S66
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-016	ES1616014-017	ES1616014-018	ES1616014-019	ES1616014-020
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	----	<0.5	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	----	<0.5	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	----	<0.5	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	----	<0.5	----
Bromoform	75-25-2	0.5	mg/kg		----	----	----	<0.5	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	----	<0.5	**1.0**
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	----	<0.5	**1.0**
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	----	<0.5	**0.6**
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	----	<0.5	**0.6**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	----	<0.5	**0.7**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S61	S62	S63	S65	S66
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-016	ES1616014-017	ES1616014-018	ES1616014-019	ES1616014-020
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	----	<0.5	**0.6**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	----	<0.5	**4.5**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	----	<0.5	**0.7**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	----	**0.6**	**1.0**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	----	**1.2**	**1.3**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	----	<10	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	----	<50	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	----	<100	**110**
C29 - C36 Fraction	----	100	mg/kg		----	<100	----	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	----	<50	**110**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	----	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	----	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	----	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		----	<100	----	<100	**180**
>C34 - C40 Fraction	----	100	mg/kg		----	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	----	<50	**180**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	----	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	----	<0.2	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		----	<0.5	----	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	----	<1	<1
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S61	S62	S63	S65	S66
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-016	ES1616014-017	ES1616014-018	ES1616014-019	ES1616014-020
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	----	95.2	----
Toluene-D8	2037-26-5	0.5	%		----	----	----	77.8	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	----	75.7	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	97.4	----	108	80.2
2-Chlorophenol-D4	93951-73-6	0.5	%		----	93.5	----	104	75.3
2.4.6-Tribromophenol	118-79-6	0.5	%		----	69.9	----	77.3	52.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	94.6	----	107	98.5
Anthracene-d10	1719-06-8	0.5	%		----	104	----	97.2	99.9
4-Terphenyl-d14	1718-51-0	0.5	%		----	109	----	120	111
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	104	----	84.5	84.7
Toluene-D8	2037-26-5	0.2	%		----	96.4	----	86.3	81.2
4-Bromofluorobenzene	460-00-4	0.2	%		----	87.2	----	80.6	72.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S67	S70	S71	S73	S68
			Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit	ES1616014-021	ES1616014-022	ES1616014-023	ES1616014-024	ES1616014-025
				Result	Result	Result	Result	Result
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	17.3	18.2	15.9	21.0	20.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	----	----	----	No
Asbestos Type	1332-21-4	-	--	----	----	----	----	-
Sample weight (dry)	----	0.01	g	----	----	----	----	193
APPROVED IDENTIFIER:	----	-	--	----	----	----	----	S.SPOONER
EA200N: Asbestos Quantification (non-NATA)								
ø Free Fibres	----	5	Fibres	----	----	----	----	No
ø Friable Asbestos	1332-21-4	0.0004	g	----	----	----	----	<0.0004
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	----	----	----	----	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	----	----	----	----	0.193
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	6	<5	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	1
Chromium	7440-47-3	2	mg/kg	9	31	20	10	14
Copper	7440-50-8	5	mg/kg	30	47	31	10	129
Lead	7439-92-1	5	mg/kg	24	25	37	47	106
Nickel	7440-02-0	2	mg/kg	5	36	11	4	50
Zinc	7440-66-6	5	mg/kg	37	88	84	67	198
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S67	S70	S71	S73	S68
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-021	ES1616014-022	ES1616014-023	ES1616014-024	ES1616014-025
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S67	S70	S71	S73	S68
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-021	ES1616014-022	ES1616014-023	ES1616014-024	ES1616014-025
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	----	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	----	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	----	----	----
Chloromethane	74-87-3	5	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S67	S70	S71	S73	S68
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-021	ES1616014-022	ES1616014-023	ES1616014-024	ES1616014-025
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
Vinyl chloride	75-01-4	5	mg/kg		----	----	----	----	----
Bromomethane	74-83-9	5	mg/kg		----	----	----	----	----
Chloroethane	75-00-3	5	mg/kg		----	----	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	----	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	----	----	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	----	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S67	S70	S71	S73	S68
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-021	ES1616014-022	ES1616014-023	ES1616014-024	ES1616014-025
					Result	Result	Result	Result	Result
EP074F: Halogenated Aromatic Compounds - Continued									
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	----	----	----
Bromoform	75-25-2	0.5	mg/kg		----	----	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	**0.6**
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	**2.9**	----	**3.3**
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	**0.7**	----	**0.6**
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	**0.6**	**4.3**	----	**5.3**
Pyrene	129-00-0	0.5	mg/kg		<0.5	**0.6**	**4.0**	----	**5.2**
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	**2.0**	----	**2.8**
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	**1.8**	----	**2.9**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	**2.0**	----	**3.4**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	**0.9**	----	**1.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S67	S70	S71	S73	S68
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-021	ES1616014-022	ES1616014-023	ES1616014-024	ES1616014-025
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	**1.9**	----	**2.8**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	**0.7**	----	**1.1**
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	**0.9**	----	**1.4**
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	**1.2**	**22.1**	----	**30.6**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	**2.5**	----	**3.7**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**2.7**	----	**3.9**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**3.0**	----	**4.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg		<100	**110**	**110**	----	**210**
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	**160**
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	**110**	**110**	----	**370**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	**160**	**150**	----	**320**
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	**100**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	**160**	**150**	----	**420**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	<0.2
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	<1
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S67	S70	S71	S73	S68
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]
Compound	CAS Number	LOR	Unit		ES1616014-021	ES1616014-022	ES1616014-023	ES1616014-024	ES1616014-025
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		70.1	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		95.8	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		87.1	----	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	----	----	----
Toluene-D8	2037-26-5	0.5	%		----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		99.2	95.6	107	----	90.0
2-Chlorophenol-D4	93951-73-6	0.5	%		95.3	91.0	99.4	----	86.5
2.4.6-Tribromophenol	118-79-6	0.5	%		78.1	74.2	85.9	----	86.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		97.6	92.4	99.0	----	100
Anthracene-d10	1719-06-8	0.5	%		96.2	102	108	----	106
4-Terphenyl-d14	1718-51-0	0.5	%		110	107	113	----	112
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		86.2	104	101	----	108
Toluene-D8	2037-26-5	0.2	%		87.6	91.1	90.5	----	93.0
4-Bromofluorobenzene	460-00-4	0.2	%		80.8	80.4	82.0	----	76.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	S69	S74	S75	S76	----
			Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	----
Compound	CAS Number	LOR	Unit	ES1616014-026	ES1616014-027	ES1616014-028	ES1616014-029	--------
				Result	Result	Result	Result	----
EA002 : pH (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	21.0	15.2	11.9	19.7	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	----	----
Asbestos Type	1332-21-4	-	--	----	-	----	----	----
Sample weight (dry)	----	0.01	g	----	203	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	S.SPOONER	----	----	----
EA200N: Asbestos Quantification (non-NATA)								
ø Free Fibres	----	5	Fibres	----	No	----	----	----
ø Friable Asbestos	1332-21-4	0.0004	g	----	<0.0004	----	----	----
ø Friable Asbestos (as Asbestos in Soil)	1332-21-4	0.001	% (w/w)	----	<0.001	----	----	----
ø Weight Used for % Calculation	----	0.0001	kg	----	0.203	----	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	<5	<5	5	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	2	<1	----
Chromium	7440-47-3	2	mg/kg	14	10	23	14	----
Copper	7440-50-8	5	mg/kg	12	8	360	15	----
Lead	7439-92-1	5	mg/kg	14	19	148	15	----
Nickel	7440-02-0	2	mg/kg	2	3	49	2	----
Zinc	7440-66-6	5	mg/kg	10	11	215	11	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S69	S74	S75	S76	----
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1616014-026	ES1616014-027	ES1616014-028	ES1616014-029	--------
					Result	Result	Result	Result	----
EP068A: Organochlorine Pesticides (OC) - Continued									
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S69	S74	S75	S76	----
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1616014-026	ES1616014-027	ES1616014-028	ES1616014-029	--------
					Result	Result	Result	Result	----
EP068B: Organophosphorus Pesticides (OP) - Continued									
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		----	----	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg		----	----	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg		----	----	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg		----	----	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg		----	----	----	----	----
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		----	----	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		----	----	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		----	----	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg		----	----	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		----	----	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg		----	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		----	----	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		----	----	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		----	----	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		----	----	----	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		----	----	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		----	----	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		----	----	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		----	----	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		----	----	----	----	----
Chloromethane	74-87-3	5	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S69	S74	S75	S76	----
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1616014-026	ES1616014-027	ES1616014-028	ES1616014-029	--------
					Result	Result	Result	Result	----
EP074E: Halogenated Aliphatic Compounds - Continued									
Vinyl chloride	75-01-4	5	mg/kg		----	----	----	----	----
Bromomethane	74-83-9	5	mg/kg		----	----	----	----	----
Chloroethane	75-00-3	5	mg/kg		----	----	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg		----	----	----	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		----	----	----	----	----
Iodomethane	74-88-4	0.5	mg/kg		----	----	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		----	----	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		----	----	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		----	----	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		----	----	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		----	----	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		----	----	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		----	----	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg		----	----	----	----	----
Dibromomethane	74-95-3	0.5	mg/kg		----	----	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		----	----	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		----	----	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg		----	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		----	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		----	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		----	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		----	----	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		----	----	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg		----	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		----	----	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		----	----	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		----	----	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg		----	----	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		----	----	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		----	----	----	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		----	----	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		----	----	----	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		----	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		----	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S69	S74	S75	S76	----
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1616014-026	ES1616014-027	ES1616014-028	ES1616014-029	--------
					Result	Result	Result	Result	----
EP074F: Halogenated Aromatic Compounds - Continued									
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		----	----	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		----	----	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		----	----	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		----	----	----	----	----
Bromoform	75-25-2	0.5	mg/kg		----	----	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		----	----	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	----	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S69	S74	S75	S76	----
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1616014-026	ES1616014-027	ES1616014-028	ES1616014-029	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	**130**	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	**130**	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	**170**	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	**140**	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	**310**	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	S69	S74	S75	S76	----
				Client sampling date / time	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	[19-Jul-2016]	----
Compound	CAS Number	LOR	Unit		ES1616014-026	ES1616014-027	ES1616014-028	ES1616014-029	--------
					Result	Result	Result	Result	----
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		68.0	74.2	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		89.1	110	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		83.1	103	----	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		----	----	----	----	----
Toluene-D8	2037-26-5	0.5	%		----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.5	%		----	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		108	107	96.5	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		109	105	92.3	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		91.8	88.1	88.7	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		109	106	95.2	----	----
Anthracene-d10	1719-06-8	0.5	%		120	115	102	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		120	122	106	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		120	112	110	----	----
Toluene-D8	2037-26-5	0.2	%		98.6	90.1	92.2	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		78.8	84.0	74.4	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	S40 - [18-Jul-2016]	Mid grey clay soil with several loose bundles of friable asbestos fibres approx 2 x 1 x 0.5 mm.
EA200: Description	S43 - [18-Jul-2016]	Mid brown clay soil.
EA200: Description	S53 - [18-Jul-2016]	Mid brown clay soil with one loose bundle of friable asbestos fibres approx 2 x 1 x 0.5 mm.
EA200: Description	S54 - [19-Jul-2016]	Mid brown clay soil.
EA200: Description	S68 - [19-Jul-2016]	Mid grey clay soil.
EA200: Description	S74 - [19-Jul-2016]	Mid brown clay soil.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130