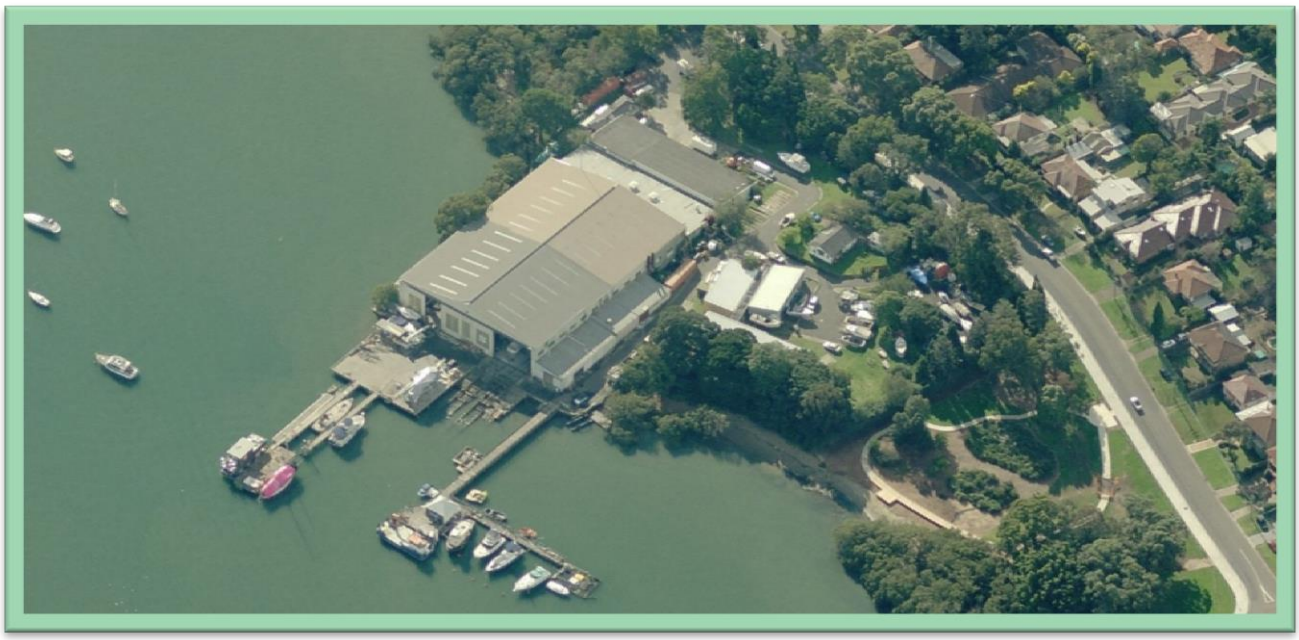
LILAC PTY LTD

20 WATERVIEW STREET, PUTNEY NSW

ADDITIONAL ENVIRONMENTAL SITE ASSESSMENT



Environmental Investigations

Report No.: E22215 AA

8 August 2014

www.eiaustralia.com.au
service@eiaustralia.com.au

Suite 6.01, 55 Miller Street
PYRMONT NSW 2009
P: 02 9516 0722

REPORT DISTRIBUTION

ADDITIONAL ENVIRONMENTAL SITE ASSESSMENT
20 WATERVIEW STREET, PUTNEY NSW

EI Report No. E22215 AA
Date: 8 August 2014

Copies	Recipient
1 Soft Copy (PDF – Secured, issued by email) 2 Hard Copies (sent by Express Courier)	Mr Dimitri Drivas Lilac Pty Ltd Suite 58, Level 5, 104 Bathurst Street SYDNEY NSW 2000
1 Original (Saved to Digital Archives)	Environmental Investigations Suite 6.01, 55 Miller Street, PYRMONT NSW 2009

Author:	Technical Reviewer:
	
ANTHONY BARKWAY Environmental Engineer	NATHAN FOSTER Senior Environmental Scientist

Revision	Details	Date	Amended By
Draft	Preliminary Draft Report	29 July 2014	N. Foster
0	Final Report	8 August 2014	N. Foster

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

1.1 BACKGROUND

Environmental Investigations (EI) was engaged by Mr Dimitri Drivas of Lilac Pty Ltd to conduct an Additional Environmental Site Assessment (ESA) for a property located at 20 Waterview Street, Putney NSW ('the site').

The purpose of this additional ESA is to evaluate the potential for contamination on site as part of a Planning Proposal (rezoning application). On 23 April 2014, the Sydney East Joint Regional Planning Panel (JRPP) recommended that the Planning Proposal proceed to exhibition, subject to the following work being completed before exhibition:

a) Detailed site investigation, as recommended in the Stage 2 environmental site assessment (Martens Engineering Consultants June 2012), to inform a remediation action plan verifying that the site can be remediated to support the proposed residential and commercial uses;

b) A review of acid sulphate soils that assesses the appropriateness of the change of land use, given the presence of acid sulphate soils on the site.

The purpose of this report is to address the above recommendations.

The site is further identified as Lots 440-447 DP15224, Lot 1 DP430647, Lot 1 DP70489 and Lot 2 DP70488 (See **Figure 1)**. The site is situated along the Parramatta River foreshore within the Local Government Area of the City of Ryde Council, covering a total land area of approximately 1.8 hectares (including 0.2 ha of waterway area), as depicted in the site plan presented as **Figure 2**.

1.2 PROPOSED DEVELOPMENT

The site is currently zoned IN4 Working Waterfront under the Ryde Local Environmental Plan 2010 and a limited range of maritime industrial uses are permitted with consent. The Planning Proposal seeks an amendment to the LEP to permit a number of uses, in order to facilitate the following development:

- Construction of a marina with 50 floating berths to accommodate a mix of small and large boats;
- Construction of a marina with 50 floating berths to accommodate a mix of small and large boats;
- Adaptive re-use of the existing boat shed and creation of an additional 1-2 levels to accommodate:
- dry boat storage for approximately 100 boats (to be vertically stacked);
- approximately 1,860 square metres of ground floor retail space;
- approximately 19 residential apartments on upper floor;
- The carrying out of remediation and other environmental improvement works;
- 19 x two storey townhouses broken into two blocks fronting Waterview Street;
- 3 storey residential flat building accommodating approximately 27 apartments located on the southern portion of the Site;
- An at-grade car park with approximately 30 spaces for the non-residential uses, and a basement car park of approximately 114 spaces for the residential development;
- Provision of public access through the Site to connect the foreshore public parks on either side of the Site, and a marine plaza to provides a managed interface between the residential area and non-residential uses;
- Retention of existing mangroves along the foreshore and other vegetation on the Site where possible; and

- Dual vehicular access points – one associated with the residential and a separate access point for marina, retail and other non-residential uses – in order to minimise conflicts.

1.3 REGULATORY FRAMEWORK

The following regulatory framework and guidelines were considered during the preparation of this report:

- ANZECC & ARMCANZ (2000) *National water quality management strategy. Australian and New Zealand Guidelines for Fresh and Marine Water Quality,* published by the Australian and New Zealand Environment and Conservation Council (ANZECC) and the Agriculture and Resources Management Council of Australia and New Zealand (ARMCANZ);
- *Acid Sulfate Soils Manual 1998* (ASSMAC, 1998);
- AS 4482.1 – 2005 Australian Standard "*Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 1: Non-volatile and semi-volatile compounds*".
- *Assessing and Managing Acid Sulfate Soils – Guidelines for Land Management in NSW Coastal Areas* (EPA, 1995);
- *Contaminated Land Management Act 1997;*
- DEC NSW (2005) *Guidelines for the Assessment and Management of Groundwater Contamination*;
- DECC NSW (2009) *Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997*;
- DEC NSW (2006) *Guidelines for the NSW Site Auditor Scheme* (2nd edition);
- EPA NSW SEPP 55 (1998) *Managing Land Contamination Planning Guidelines SEPP 55 – Remediation of Land*;
- NEPC (2013) *Schedule B(1)* Guideline on *Investigation Levels for Soil and Groundwater*, National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013, National Environment Protection Council, May 2013;
- NEPC (2013) *Schedule B(2) Guideline on Site Characterisation,* National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013, National Environment Protection Council, May 2013;
- NSW EPA (1979) *Environmental Planning and Assessment Act;*
- NSW EPA (1997) *Protection of The Environment Operations Act;*
- NSW EPA (1995) *Sampling Design Guidelines*;
- OEH (2011) *Guidelines for Consultants Reporting on Contaminated Sites*; and
- US EPA (2006) *Guidance on Systematic Planning Using the Data Quality Objectives Process*.

2 OBJECTIVES AND SCOPE OF WORK

2.1 OBJECTIVES

The principal objectives of this ESA are to:

- Evaluate the potential for site contamination on the basis of historical land uses, anecdotal and documentary evidence of possible pollutant sources including previous investigations;
- To further investigate the degree of any potential contamination by means of additional intrusive sampling and laboratory analysis, for relevant contaminants of concern;
- To establish the presence or otherwise of Acid Sulfate Soils on site; and
- Address the JRPP's recommendations.

This investigation follows standard environmental procedures as described in the OEH (2011) Guidelines for Consultants Reporting on Contaminated Sites, the National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013, National Environment Protection Council, May 2013 and the Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ 2000).

2.2 SCOPE OF WORKS

In order to achieve the above objective, and in keeping the project cost-effective while generally complying with the requirements of the NSW EPA guidelines, the scope of works was as follows:

Desktop Study

- A review of relevant topographical, geological, hydrogeological and soil landscape maps for the project area;
- A review of the previous environmental investigation report available for the site;
- A search through the NSW EPA / OEH Land Information records to confirm that there are no statutory notices current on the site under the *Unhealthy Building Land Act* (1990) or the *Contaminated Land Management Act* (1997); and
- A review of existing underground services on site.

Field Work

- A detailed site walkover inspection;
- Construction of test boreholes at fourteen (14) additional locations (BH301 – BH314) distributed in targeted locations across accessible areas of the site;
- Multiple level soil sampling down to natural soils;
- Three (3) of the locations are to include sampling to establish the presence of Acid Sulfate Soils on site. Samples will be collected from each distinguishable soil horizon, or in 1.0m depth increments, down to approximately 4.0m BGL.
- Installation of 5 groundwater monitoring bores, located at targeted monitoring points aimed at assessing groundwater quality, groundwater flow and standing water level fluctuations.

- Four grab (4) samples to be collected of sub-tidal sediments from Parramatta River for the analysis of organotins previously being identified within the area;
- Laboratory analysis of selected soil samples for relevant analytical parameters as determined from the site history and previous investigation being conducted as well as field observations during the investigation program; and
- Data interpretation and reporting.

3 SITE DESCRIPTION

3.1 PROPERTY IDENTIFICATION, LOCATION AND PHYSICAL SETTING

The site identification details and associated information are presented in **Table 3-1,** while the site locality is shown in **Figure 1**.

Table 3-1: Site Identification, Location and Zoning

Attribute	Description
Street Address	20 Waterview Street, Putney
Location Description	The site is approx. 11 km north west of Sydney central business district and is an irregular shaped block bound by Waterview Street (north-east) beyond which are mainly residential type properties, a parkland/recreational land to the north-west and south-east and Parramatta River (south and west).
Site Area/GDA	Total area of approx 1.8 hectares (including 0.2 ha of waterway area, information obtained from SIX maps, *Ref: www.six.nsw.gov.au*) Northern corner GDA Lat:-33.8825184199, Long: 151.100417085
Site Owner	Lilac Pty Ltd, C/- Drivas Property Group.
Lot and Deposited Plan (DP)	Lots 440-447 DP15224, Lot 1 DP430647, Lot 1 DP70489 and Lot 2 DP70488
State Survey Marks	Two State Survey Marks (SSM) were found in the vicinity of the site located along the Waterview Street, one being at the crossing with Princes Street identified as SS83184 (i.e. north of the site) with another mark being situated close to the south-eastern corner of the site identified as SS83581. (*Ref: www.six.nsw.gov.au*)
Local Government Authority	City of Ryde Council
Parish	Hunters Hill
County	Cumberland
Current Zoning	*IN4 – Working Waterfront* (Ryde Local Environment Plan, 2010)

At the time of this assessment, the site land uses have included boat berthing, repairs and maintenance as well as storage. The infrastructure on site comprises the main warehouse building (~3,200 m^2) situated across the northern and western parts of the site and was mainly used for boat related maintenance purposes including metal works, timber works, repainting bays, removal of wastewater, welding and storage, overall housing and facilitating a number of commercial / light industrial tenancies. Adjoining the main building to the south-west were three separate wharfs (i.e. one concrete, one timber and one finger wharf) as well as 2 slipways for boat access. A number of smaller working sheds where situated across the south-eastern parts of the site and were utilised as storage space and workshops some accommodating tenancies associated with boat repairs and maintenance. The site area also incorporated a number of designated parking areas for boats and cars as well as some landscaping and open space areas. A site plan illustrating the subject area with all features is shown in **Figure 2**.

3.2 LOCAL LAND USE

The site is situated along the Parramatta River foreshore area being zoned as an industrial precinct identified by the LEP as *Working Waterfront* (Ryde Draft Local Environment Plan, 2011). Current surrounding land uses are described in **Table 3-2.**

Table 3-2 Local Surrounding Land Use

Direction from Site	Land Use Description
North / North-East	Waterview Street (Princes Street) followed by residential type projects (mainly being 2 and 3 storey dwelling structures).
East	Waterview Street followed by a line of residential type projects.
North-West	Parkland /Undeveloped Land / Mangroves.
South-East	Recreational / Communal Parkland (Bennelong Park).
West	Parramatta River.

3.3 REGIONAL SETTINGS

The topographical, geological, soil landscape and hydrogeological information for the locality is summarised in **Table 3-3**.

Table 3-3 Topographical, Geological and Hydrogeological Information

Attribute	Description
Topography	The site lies on the foreshore embankment slope, which naturally slopes in a westerly / south-westerly direction towards Parramatta River. Due to various human activities occurring at the site over a number of years the overall site topography has been altered and artificially levelled whilst some parts still remain in their natural condition. The site has dramatic changes in topography around the north-eastern part with general topography rapidly changing from the bounding Waterview Street to the site area. The topography is more or less uniform for most of the central and south-western parts gradually falling in a westerly direction towards Parramatta River. In general the site elevation changes from about 9m to 2m AHD between the eastern and western parts of the site, 9m and 3m AHD along the north-eastern boundary and between 9 and 6m AHD from eastern to central parts of the site. (*Ref: Martens & Associates Pty Ltd Survey*). The land present to the west / south-west of the site appears to be somewhat reclaimed, based on the straight lined edges of the land present along the bay. This may indicate a former estuarine environment (i.e. estuarine muds) present along this part of the site.
Site Drainage	It is expected that the stormwater across the site will drain generally in the westerly direction towards Parramatta River. The stormwater drainage easement line most likely runs along the main site access road south-east of the main warehouse structure on site and was found to be discharging around the area of a stone retention wall along the southern parts of the site.
Regional Geology	The site is likely underlain by Hawkesbury Sandstone (*Rh)*. Hawkesbury Sandstone is described as medium to coarse-grained quartz sandstone, very minor shale and laminite lenses. Estuarine deposits may be present along the southern boundary of the site, remnant of the former location of Parramatta River, with alluvial soils present within the central drainage line. *(Ref. 1:100 000 Geological Series Sheet 9130 –Sydney)*
Soil Landscapes	The Soil Conservation Service of NSW *Soil Landscapes of the Sydney 1:100,000 Sheet* (*Ref: Chapman and Murphy, 1989*) indicated that the site overlies a *Gymea (Gy*) soil landscape. This landscape includes undulating to rolling rises and low hills on Hawkesbury Sandstone. With shallow to moderately deep *Yellow Earths* and *Earthy Sands* on crests and inside of benches, localised *Gleyed Podzolic Soils* and *Yellow Podzolic Soils* on shale lenses, and *Siliceous and Leached Sands* along drainage lines. Limitations of this soil profile include localised steep slopes, high soil erosion, rock outcrops, and shallow highly permeable soils with very low soil fertility.

Attribute	Description
Acid Sulfate Soil Risk	The *Acid Sulfate Soil Risk Map* (Ref: *Prospect_Parramatta 1:25,000 scale; Murphy, 1997*) indicates that the southern parts of the subject site lie within the Landform coded Ei0 – which is an Estuarine Intertidal Flat and within the map class of High Probability of Occurrence at or near the ground surface. Within such areas there is a severe environmental risk if Acid Sulfate Soil materials are disturbed by activities such as shallow drainage, excavation or clearing. Most of the remaining site area falls within the area of No Known Occurrences, in which cases, acid sulfate soils (ASS) are not known or expected to occur and "land management activities are not likely to be affected by ASS materials" The *Ryde Local Environmental Plan 2010- Acid Sulfate Soils Risk Class Map* indicates that the site lies within Classes 2 and 5 ASS area. Council consent is therefore required prior to commencing any works below natural ground surface or within 500m of Class 1, 2, 3 or 4 land, with a ground elevation of below 5m Australian Height Datum (AHD) and where the water table is likely to be lowered below 1m AHD on adjacent Class 1, 2, 3 or 4 land. However, due to the drainage line within the centre of the site which is expected to contain alluvial soils, and the potential presence of estuarine muds to the south, an assessment of acid sulfate soils was considered appropriate.
Soil Salinity Risk	Considering that the underlying bedrock comprises Hawkesbury Sandstone, EI considers that the salinity risk to the development is considered to be low (Ref: Salinity Potential in Western Sydney, 2002). An assessment of soil salinity was thus considered to be unwarranted.
Typical Vadose Zone Soil Types	Surficial sandy fill overlying weathered sandstone around central and south-western parts of the site. Shallow groundwater is expected within alluvial soils / weathered fractured sandstone and / or estuarine muds.
Depth to Groundwater	Groundwater was encountered between 1.109 and 4.149 m BTOC during the groundwater investigation, with an average depth to groundwater being at about 1.1-1.4m BTOC and general flow direction being towards Parramatta River.
Groundwater Types	Groundwater is expected to occur in the underlying alluvial and estuarine soil material as well as in the underlying sandstone fractures and bedding planes. Overall the groundwater is expected to flow toward Parramatta River.
Nearest Water Body	Parramatta River bounds the site to the south and south-west, is the nearest receiving water body, and is considered to be a marine water environment and a part of Sydney Harbour.

4 PREVIOUS INVESTIGATIONS

Two previous environmental assessments have been conducted with relation to the site area. These reports are:

- *Stage 1 Environmental Site Assessment: 20 Waterview Street, Putney, NSW;* Martens and Associates (M&A) Report No.: P1203398JR01V01, (2012)
- *Stage 2 Environmental Site Assessment: 20 Waterview Street, Putney, NSW;* Martens and Associates (M&A) Report No.: P1203398JR02V01, (June, 2012) (Provides an overall indication of contamination on site)

Summary of works and key findings of the previous Stage 1 and 2 ESA reports are outlined below within **Table 4-1** and **Table 4-2**, as follows:

Table 4-1 Summary of Works and Key Findings of the Previous Stage 2 Environmental Site Assessment

Assessment Details	Project Tasks and Findings
Stage 1 Environmental Site Assessment (M&A, 2012)	
Work Objectives	*The objectives of the Stage 1 ESA include:* • *Identify potentially contaminating activities that are currently being performed on the site and that may have been performed on the site in the past;* • *Make an assessment of potential areas of environmental concern (AEC) and associated chemicals of concern (COC) (if any), with respect to existing and future land use; and* • *Provide recommendations for further investigations required.*
Scope of Works	*The scope of work includes:* • *Site inspection;* • *Site history review, including historical aerial photograph review, search of Council records, NSW Office of Environment and Heritage (OEH) and NSW WorkCover records;* • *Determine the site's Acid Sulfate Soil (ASS) potential;* • *Identification of potential areas of environmental concern (AECs) and chemicals of concern (COCs) (if any); and* • *Preparation of a Stage 1 ESA in general accordance with the relevant sections of NSW EPA (1997) and DEC (2006).*
Conclusions	*The following site features and uses have potential to cause contamination or to have caused site contamination:* • *Rubbish stockpiles located in a number of locations across the site include scrap metal, asbestos sheeting, timber pallets, fuel/oil drums, PVC piping, concrete blocks, abandoned skip bins, water tanks and car/boat parts.* • *Storage of petroleum based products, paints, batteries, waterproofing compounds, detergents and other various chemicals.* • *Evidence of surface contamination from a waste oil sump.* • *Historical aerial photographs show the site has been used for boat storage, repair, maintenance and berthing for at least the last 55 years.* • *Limited Council DA/BA records are available given the site is owned by ADI and Council consent was not required for past works. The 1991 application for extension of an existing jetty is the limit of approvals.* • *No notices have been issued in relation to the site or surrounding sites under the Contaminated Land Management Act (1997) or the Environmentally Hazardous Chemicals Act (1985).* • *A NSW Workcover search of the SCID and the microfiche records has not located any*

Assessment Details	Project Tasks and Findings
	records pertaining to the site. • *There is a likelihood that ASS may be present at the site along the Parramatta River shore.* *Therefore chemicals of concern (COC) include, Heavy Metals, TRH, BTEX, PAH, OCP/OPP, VOCs, VCH, Phenols, Alkyltin, Asbestos.*
Recommendations	*Based on the findings it was recommended that a Stage 2 contamination assessment be undertaken.*

Table 4-2 Summary of Works and Key Findings of the Previous Stage 2 Environmental Site Assessment

Assessment Details	Project Tasks and Findings
Stage 2 Environmental Site Assessment (DP, 2010)	
Work Objectives	*The objectives of the investigation were to assess soils and sediment contamination in order to determine the suitability of the site for the proposed rezoning and anticipated land uses.*
Scope of Works	• *Drilling / excavation of thirty-four (34) boreholes (BH201 – BH227) and test pits (TP228 – TP334), and collection of soil and sediment samples for laboratory analysis;* • *Preparation of a report in general accordance with NSW EPA (2000) detailing assessment fieldworks and reported laboratory analytical results relating to pertinent contaminants of concern identified in the MA prepared Stage 1 ESA;*
Conclusions	*Analysis of COC from onsite soils and foreshore sediment samples collected from AEC indicate that TPH/TRH, VOC, PAH, TBT, DBT, and heavy metal concentrations occur at levels exceeding adopted HIL and ISQG criteria. These findings indicate that the site in its current condition is not suitable for proposed land use (residential and commercial including proposed marina) associated with rezoning of the land. The site shall require remediation prior to it being suitable for commercial (with marina) and residential land use. Further investigation is likely to be required to develop the site Remedial Action Plan (RAP). The development of the RAP shall be required to develop the appropriate remedial strategy, in light of the proposed site development and land use.*
Recommendations	*Based on the findings of this investigation, Martens and Associates recommend further the following works to render the site fit for intended use (this may not necessarily be an exhaustive list of actions):* • *Detailed assessment of groundwater across the site in light of reported areas of contamination;* • *Further assessment of soils within the main building / warehouse (Area 3) including a broad suite of analyses;* • *Delineation sampling of areas surrounding contamination points identified to exceed adopted HIL;* • *Further assessment of foreshore sediment, particular in areas below the intertidal zone to assess the degree of contamination;* • *Preparation of a site remedial action plan (RAP);* • *Remediation of the site; and* • *Validation of remediation and preparation of a validation assessment report.* *In light of the identification of total PAH, copper, and aromatic TPH (>C15-C36) are at concentrations 2.5 x HIL; and PAH, heavy metals and TBT contamination at levels 2.5 x ISQG, we recommend notification to the NSW OEH of contamination at the site, as per section 60 of the Contaminated Land Management Act 1997.*

5 SITE WALKOVER INSPECTION

Mr Anthony Barkway (EI, Environmental Engineer) made the following observations during an inspection of the site on 4 April, 2014, with a summary of the findings of the report provided below in **Table 5-1**:

- The site is an irregular commercial / industrial block with various boating, marine services and boatworks related operations and tenancies. The site is situated along the Parramatta River foreshore and is bound by Waterview Street to the north-east, beyond which were residential type projects (mainly being 2 and 3 storey dwelling structures), parkland /undeveloped land / Mangroves to the north-west as well as recreational / communal parkland (i.e. Bennelong Park) to the south-east.
- The site is situated on the foreshore embankment slope, which naturally slopes in a westerly / south-westerly direction towards Parramatta River. Due to various human activities occurring at the site over a number of years the overall site topography has been altered and artificially levelled with some parts of the site still remaining in their natural condition. The site has dramatic changes in topography around the north-eastern part with general topography rapidly changing from the bounding Waterview Street to the site area. The topography is more or less uniform for most of the central and south-western parts gradually falling in a westerly direction towards Parramatta River. In general the site elevation changes from about 9m to 2m AHD between the eastern and western parts of the site, 9m and 3m AHD along the north-eastern boundary and between 9 and 6m AHD from eastern to central parts of the site. (Ref: Martens & Associates Pty Ltd Survey). The land present to the west / south-west of the site appears to be somewhat reclaimed, based on the straight lined edges of the land present along the bay. This may indicate a former estuarine environment (i.e. estuarine muds) present along this part of the site.; and
- The site comprises of a number of allotments as described in **Table 5-1**.

Table 5-1 Summary of buildings and infrastructure on site

Lot	Buildings	Observations
Lots 440-447 DP15224; and Lot 1 DP430647 (north western and central parts of the site)	Large composite warehouse structure. Adjoining it to the east / south-east were a number of smaller workshop structures, whilst adjoining the main building to the south-west are three separate wharfs (i.e. one concrete, one timber and one finger wharf) as well as 2 slipways for boat access. A hip roofed structure was adjoining the northern corner of the main building.	This part of the site includes the main vehicle access from Waterview Street onto the site premises which connects onto the main concrete / bitumen road running through the site. Concrete/bitumen area situated across the northern / north-western part of the site was in use as car parking and storage areas with a number of car and van wreckages, shipping containers as well as large waste disposal bins situated in its various parts. A landscape / vegetation area was located along the north-eastern site boundary and was populated by large trees, shrubs and other types of vegetation, this area was found to have a number of boat wreckages and other various items stored throughout. The north-eastern part of the Lot 447 DP15224 was used to store a number of large morrell skip bins. The main warehouse building is a composite structure built of corrugated iron and fibro cement sheeting and was found accommodating boat maintenance / repairs bay areas and a number of tenanted workshops. Various items were found stored throughout the premises some of which included household items, car and boat wreckages, various types of cylinders, storage boxes, appliances, various types of sheeting etc. The concrete and finger wharfs were operational at the time of the assessment, whilst the timber wharf was severely damaged being decommission and in-accessible.

Lot	Buildings	Observations
Lot 2 DP70488 (Central and south eastern part of the site)	A number of small sheds / buildings	This part of the site was found to be occupied by a number of structures and working sheds most of which were tenanted with various activities/operations being conducted related mainly to boat maintenance / repairs. One of the buildings in the southern part of the allotment (i.e. with adjoining timber verandah area) was known to have been formally in use for various types of metal works. Most of the structures were made of brick, cement render, corrugated iron sheeting and fibro cement with metal roofs and awnings. A small concrete blockshed and a metal post and wire mesh shed were found in the south-western part of this allotment with an adjacent waste disposal area which was identified to contain various drum/cylinder storage containers filled with waste oil/petroleum type products. The central and north-eastern parts of the allotment were found to contain bitumen paved road which accessing a number of parking areas situated in this part of the site. Boats, trailers and various types of machinery and equipment as well as some skip bins were identified throughout the parking areas. A single storey gable roof fibro cement building with adjoining fibre cement garage structure (accessed via a bitumen driveway) were also identified situated in this part of the site. The area north east of this structure was overgrown with trees and vegetation. The southern most parts of the site within Lot 2 DP70488 and Lot 1 DP70489 were separated from the foreshore / tidal area via a stone retention wall.
Lot 1 DP70489 (South-eastern part of the site)	Small metal building, BBQ area and bitumen car parking areas.	This part of the site was found to have been mostly overgrown with various trees and other types of vegetation mostly being along its eastern, western and southern boundaries as well as in its central part. Northern and central parts of this allotment were found to have been occupied by bitumen car park areas with boats, trailers, various types of machinery and equipment as well as some skip bins identified throughout these areas. A small metal shed structure as well as a BBQ area was identified in central and south-western parts of this allotment.

6 PRELIMINARY CONCEPTUAL SITE MODEL

In accordance with the *National Environmental Protection (Assessment of Site Contamination) Measure 1999 (Amendment 2013) Schedule B2 – Guideline on Site Characterisation* (NEPM 2013), and to aid in the assessment of data collection for the site, EI has developed a preliminary conceptual site model (CSM) with an assessment of plausible pollutant linkages whereby a source of contamination can migrate along a given pathway and have an effect on a particular receptor. The CSM provides a framework to allow for the review of any information collected to ascertain the reliability and useability of the data collected, and to identify any gaps in field investigations. Each migration and exposure pathway is summarised in **Table 6-1** along with an assessment that provides a qualitative opinion of the potential risk of each complete exposure pathway.

Table 6-1 Preliminary Conceptual Site Model

Site	Subsurface Profile	Potential Sources	Potential Contaminants	Media	Sensitive receptors	Migration & Exposure Pathways	Potential Risk of Complete Exposure Pathway
Area 1 - western corner	Pavement overlying fill then sandstone bedrock	Commercial / industrial activity including builders waste storage, furnishings, paint storage and detergents in shed, possible termiticide and pesticide use, uncontrolled filling (land reclamation) and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Building fabric Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Low (based on presence of contamination)
Area 2 – North western corner adjacent to main building	Pavement overlying fill then sandstone bedrock	Commercial / industrial activity including storage of boat parts, uncontrolled filling, possible termiticide and pesticide use, and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Medium (based on presence of contamination)
Area 3 – Beneath main building	Fill overlying sandstone bedrock	Commercial / industrial activity including metal working, fabrication of timber components, painting, waste water, weldings, possible termiticide and pesticide use, uncontrolled filling (land reclamation) and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Building fabric Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	High (based on presence of contamination)
Area 4 – East of the main gate entry	Fill overlying sandstone bedrock	Commercial / industrial activity including storage of waste (scrap metal, timer, building material, rubber, metal pipes, small boats, vessel components), possible pesticide use, uncontrolled filling (land reclamation) and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Low (based on presence of contamination)

Site	Subsurface Profile	Potential Sources	Potential Contaminants	Media	Sensitive receptors	Migration & Exposure Pathways	Potential Risk of Complete Exposure Pathway
Area 5 – North of main building	Covered and paved or grassed area overlying fill material then.	Commercial / industrial activity including electrical transformer, possible pesticide use, uncontrolled filling (land reclamation) and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Low to medium (based on presence of contamination)
Area 6 – East of main building	Covered and paved overlying fill material then sandstone bedrock	Commercial / industrial activity mechanical workshop, metal workshop, above ground diesel tank, chemical storage, possible termiticide and pesticide use, uncontrolled filling (land reclamation) and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Building fabric Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Medium (based on presence of contamination)
Area 7 – West of main building	Estuarine sediments	Commercial / industrial activity painting, stripping, refitting, cleaning of craft, oil removal and oil drum storage, grit blasting, painting, sanding, burning off, scraping paint, and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Building fabric Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	High (based on presence of contamination)
Area 8 – North east corner of the main building	Covered and paved overlying fill material then sandstone bedrock	Commercial / industrial activity including former rubber site, waste material storage including car bodies possible termiticide and pesticide use, uncontrolled filling (land reclamation) and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Former building fabric Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Low to medium (based on presence of contamination)
Area 9 – West of main building	Marine sediment including sand, silts and peat overlying sandstone bedrock.	Neighbours commercial / industrial activities, stormwater pipe discharges and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Building fabric Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Medium to high (based on presence of contamination)

Site	Subsurface Profile	Potential Sources	Potential Contaminants	Media	Sensitive receptors	Migration & Exposure Pathways	Potential Risk of Complete Exposure Pathway
Area 10 – North of main building	Paved and covered overlying clayey sand, sand, sandy clay then sandstone bedrock	Commercial / industrial activity including storage of old car bodies, possible termiticide and pesticide use, uncontrolled filling and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Building fabric Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Medium (based on presence of contamination)
Area 11 – North west of main building	Covered and paved overlying fill material then estuarine sediments and sandstone bedrock	Commercial / industrial activity including builders waste, boat and car storage, possible termiticide and pesticide use, uncontrolled filling and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Medium to high (based on presence of contamination)
Area 12 – South eastern corner of site	Bitumen, and grassed overlying fill material then sandstone bedrock.	Commercial / industrial activity including builders waste, boat and storage, oil drums, possible termiticide and pesticide use, uncontrolled filling and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Low to medium (based on presence of contamination)
Area 13 – East of main building	Concrete overlying fill material, sand then sandstone bedrock	Commercial / industrial activity including old battery storage, empty drum/containers, old car/boat parts, battery charging, possible termiticide and pesticide use, uncontrolled filling and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Building fabric Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Medium (based on presence of contamination)
Area 14 – Southern end of site	Concrete overlying fill material, sandy clay, sand then sandstone bedrock.	Commercial / industrial activity including storage of old boats and trailer, pesticide use, uncontrolled filling and potential acid sulphate soils.	Heavy Metals, TRH, BTEX, PAH, OCP/OPP, PCBs, VOCs, VCH, Phenols, Alkyltin and Asbestos.	Soils/Bedrock Groundwater Air/soil vapour LNAPL/DNAPL (if present)	Aquatic ecosystems Site workers during remediation and construction. Future site workers Future site residents Sensitive offsite receptors	Migration of contaminants into sub-surface soils, and groundwater/ Dermal contact Ingestions Inhalation	Medium (based on presence of contamination)

7 SAMPLING, ANALYTICAL AND QUALITY PLAN (SAQP)

The SAQP plays a crucial role in ensuring that the data collected as part of this, and ongoing environmental works carried out at the site are representative, and provide a robust basis for site assessment decisions. This SAQP includes the following:

- Data quality objectives, including a summary of the objectives of the ESA;
- Investigation methodology including media to be sampled, details of anolytes and parameters to be monitored and a description of intended sampling points;
- Sampling methods and procedures;
- Field screening methods;
- Analysis Methods;
- Sample handling, preservation and storage; and
- Analytical QA/QC.

7.1 DATA QUALITY OBJECTIVES (DQO)

The scope of the ESA works has been devised broadly in accordance with the following Data Quality Objective (DQO) process, as defined in NSW Environmental Protection Agency (EPA) *Guidelines for the NSW Site Auditor Scheme (2nd Edition), 2006* (NSW Auditor Scheme 2006) and the Australian Standard "Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 1: Non-volatile and semi-volatile compounds" (AS 4482.1 – 2005). The DQO process for the ESA is outlined in **Table 7-1** below.

Table 7-1 Data Quality Objectives

DQO Process Steps	Inputs / Outputs
Step 1 – State The Problem	
Summary of the contamination problem	For redevelopment purposes evidence of the site's suitability; or the requirements to make the site suitable, for residential and commercial land uses as well as for use as a marina, is required in accordance with NSW Planning Guidelines.
Planning team / Stakeholders	• Site owner / client (main contracting body) – Lilac Pty Ltd; • Environmental Consultant – EI Australia Pty Ltd and all related subcontracting bodies for this assessment; • LGA – Ryde City Council; • NSW EPA; and • End Site Users
Define Exposure Scenarios	Based on the proposed anticipated development the final site exposure setting is considered to include a mixture of HIL B – Residential with minimal opportunities for soil access; HIL C – Public Open Space; as well as HIL D – Commercial / industrial sites (NEPM 2013). It is expected that during site redevelopment a large proportion of the subject area will experience some soil disturbances with depth of excavation being potentially down to approx. 3 m BGL (i.e. for the construction of the basement car parking) with some of the original soils and fill materials currently present being expected to remain on-site, thereby the potential sources of contamination and the associated risk of exposure to the nearby environmental receptors as well as the end users of the site, given the anticipated exposure scenario (i.e. site workers and visitors through direct contact with soil or inhalation of vapours) is of most concern. Consideration should be given to exposure to potentially impacted groundwater if present.

DQO Process Steps	Inputs / Outputs
Available Resources	• Project budget for human resource hire, field sampling programme and laboratory analysis; • Human Resources which include EI Consultants and all subcontracting personnel hired to undertake the required project tasks; • NATA accredited laboratories for the analyses of the field samples being collected; and
Step 2 – Identify the Decision	
Identify Decision	Are the soils present at the site suitable for the proposed land uses? Does groundwater present at the site pose a risk to the potential environmental receptors as well as end site users? Furthermore, do soils designated to remain at the site, suitable for the receiving ecological communities?
Identify alternative actions	• Use a response action, such as remediation and/or complete a risk assessment at the site to restrict access and potential exposure, or recommend further investigation; versus • Recommending no further assessment.
Step 3 – Identify the Inputs to the Decision	
Identify Inputs	Data collected from previous assessment, as well as soil and groundwater analysis data and anecdotal information collected onsite.
Define Limits for Screening	Limits as defined by HIL B, C and D – NEPC 2013, as well as the HSL A&B, C and D for fine / coarse grained soil types, followed by the ecological investigation and screening levels, derived for the site. (*Ref: NEPC 2013 – Schedule B[1]*).
Identify Analytical Methods	All contracted laboratories are accredited by NATA for the analyses undertaken and use analytical methods as defined in NEPC 2013 – Schedule B(3).
Step 4 – Define the Study Boundaries	
The ESA investigation will focus on soil sampling across the site, targeting areas considered to be of concern based on the findings of the Phase 1 assessment, as well as any areas identified as contaminated. The spatial boundaries of the assessment were limited as follows:	• Lateral - the geographical boundary of the assessment was defined by the site boundary, as illustrated in **Figure 2.** However it may also include areas beyond the site boundaries if there are evidence being uncovered indicating that the contamination has occurred; • Vertical - from the existing ground level to the proposed depth of excavation for the basement car park; and • Temporal - the findings of this assessment will hold true for as long as the site use remains passive in nature; that is, for as long as the site is used for commercial/residential uses and there are no activities taking place onsite or on the immediately adjacent properties that may compromise onsite environmental conditions Sampling will be completed within areas which can be practicably accessed, which will be limited by onsite constraints such as underground services, and current buildings on site.
Step 5 – Develop a Decision Rule	
Specify Parameter of Interest	'True Mean' individual contaminant concentration in each area of environmental concern (See **Section 6**). However, as the evaluation of this parameter requires numerous samples to be collected and analysed, the maximum composite concentration, or 'Max Test' shall be used.
Specify Investigation / Screening Levels	The screening levels are calculated using the data provided in NEPC 2013 – Schedule B(1) as well as site specific data being collected (i.e. soil physicochemical properties, bore logs etc.). Overall the laboratory analytical results will be assessed against the adopted: • Relevant soil investigation and screening levels (SILs); and • Relevant groundwater investigation and screening levels (GILs). Furthermore, as site is known to contain un-homogenous fill materials, and clay like residual soils, the acceptable RPD % values applied to assess the quality control of a site shall be 50%

DQO Process Steps	Inputs / Outputs
Confirm that detection limits are appropriate	Laboratory methodologies will be adopted in accordance with NEPC Schedule B(3), with all laboratory limits of reporting (LOR) checked to confirm that that the LOR values are below the adopted criteria.
Specify "If . . . , then . . . " decision rule	If the 'true mean' concentration at a particular sampling location is found to exceed the adopted SIL for the respective individual contaminant of concern (COC), then additional investigation and/or a risk assessment will be required. If the 'true mean' concentration at a particular sampling location is found to be less than the adopted SIL for the respective individual contaminant of concern then the soils at the site are considered not to pose an unacceptable risk from the COC to the identified on- and off- site environmental receptors, and therefore no further investigation is required. If the 'true mean' concentration of the respective contaminant of concern within groundwater is found to exceed the adopted GIL values, then further investigation and a site based risk assessment should be undertaken to define the risk to the identified on- and off- site environmental receptors. If the 'true mean' concentration of the respective contaminant of concern within groundwater is found to be below the adopted GIL, then the groundwater at that location will be defined as unaffected for the respective COC and will be considered as posing no unacceptable risk from the COC to the identified environmental receptors, and therefore no further investigation is required.
Step 6- Specify Limits on Decision Errors	
Define the null hypothesis	The null hypothesis is that the site is suitable for 'residential land uses with minimal access to soils' as defined by the NEPC 2013. This hypothesis will be kept until overwhelming evidence suggests otherwise, at which time the site will require remediation.
Define the grey region	Where soils and or groundwater concentrations are just above, just below or meet the adopted criteria.
Define Type 1 and 2 decision errors	Type 1 error –do not remove soils with 'true mean' concentrations exceeding the soil criteria by 2.5 times, or do not further assess groundwater with 'true mean' concentrations exceeding the groundwater criteria by 2.5 times. Type 2 error – remove soils with 'true mean' concentrations which do not exceed the soil screening levels, or further assess groundwater with 'true mean' concentrations exceeding the groundwater criteria by 2.5 times.
Identify Consequences	Type 1 error results in soils remaining on site which could pose a risk to human health and the end users of the site, or impacted groundwater to remain at an unacceptable level of contamination which could pose a risk to human health and the end users of the site. Type 2 error results in unnecessary removal of soils to landfill, or unnecessary remediation / further assessment of groundwater at an unnecessary cost.
Define tolerable limits	
Define tolerable limits	• A decision can be made based on the probability that a contamination hotspot of a certain circular diameter will be detected with 95% confidence using a selected density of systematic data points. The decision error will be limited to a probability of 5% that a contamination hotspot may not be detected. • A decision can be made based on a probability that 95% of the data, which is collected using a systematic sampling pattern, will satisfy the given site criteria. Therefore a limit on the decision error will be 5% that a conclusive statement may be incorrect
Step 7 – Optimise the Design for Obtaining the Data	
Determine how to best estimate 'true mean'	Samples collected from random locations, are considered to represent of the overall soils present at the site, then using the reported laboratory concentrations as a conservative estimate of the 'true mean' of contaminant concentrations present in soils at the site. However, soils present along the southern boundary of the site, as well as alluvial soils expected within the central drainage line should be targeted for an assessment of acid sulfate soils.

DQO Process Steps	Inputs / Outputs
	Using groundwater samples collected from predefined, monitoring bore locations present up and down the hydraulic gradient of the site, the maximum contaminant concentrations reported by the laboratory will be used as a conservative estimate of the 'true mean' for groundwater present within the site.
Determine expected variability of surface soil and groundwater contaminant concentrations	As the residual soils present at the site are known to contain fill materials of unknown sources, overlying a non-homogenous residual clay material, variability at the site is expected. Therefore, variability between soil sampling locations is expected, and the highest sampling density (while acknowledging budgetary constraints) shall be collected, being 14 targeted sampling locations.
Design Sampling Strategy	Lowest cost sample design is preferred, with selection of sampling locations using a herringbone systematic sampling regime. Push tube drilling methods are to be applied wherever possible to preserve sample integrity.
Develop planning documents for the field investigation.	NSW EPA *Sample Design Guidelines (1995),* this SAQP as well as EI's operating procedures.

7.2 DATA QUALITY INDICATORS

To ensure the data collected as part of the ESA was of quality, the following data quality assurance procedures were adopted, as presented in **Table 7-2** below. An assessment of the data quality indicators (DQI) relating to both field and laboratory procedures shall be carried out, with the details of the assessment presented in **Table 7-3** below.

Table 7-2 Data Quality Assurance Procedures

Item	Objectives
Environmental Consultant	The Environmental Consultant should maintain Quality Assurance Systems certified to AS/NZS ISO 9001:2000. Work would be undertaken by appropriately qualified and experienced personnel.
Sample handling and Storage	Work should be undertaken general in accordance with field procedures based on industry accepted standard practice and in accordance with: ▪ Australian Standard AS4482.1 (2005) Guide to the investigation and sampling of sites with potentially contaminated soil – Part 1: Non-volatile and semi-volatile compounds; ▪ Australian / New Zealand Standard AS/NZS 5667.11 (1998) Guidance on sampling of groundwater; ▪ NSW EPA (March 2004) Approved Methods for the sampling and analysis of water pollutants in New South Wales; and ▪ National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013, National Environment Protection Council, May 2013.
Transport	Samples would be stored in an ice brick-cooled esky and transported to the laboratory. To ensure the integrity of the samples from collection to receipt by the analytical laboratory, samples will be sent to the laboratories under "chain of custody" (CoC) describing sample preservation and transport duration. One trip blank per sample batch sent to laboratory. Results for trip blanks should all be non-detected.
Volatile losses	One spiked sample should be analysed per batch for soils. Volatile losses should be less than 10 percent in the trip spike. As previous sampling has not identified volatiles as being present within groundwater, the requirement of this sample within the groundwater monitoring event was deemed unnecessary.
QA samples	Field and laboratory QA samples will be analysed as follows: ▪ intra-laboratory duplicate samples at a rate of 1 in 10 primary samples ▪ inter-laboratory duplicate samples at a rate of 1 in 20 primary samples. Field and Laboratory acceptable limits are between 30–50% RPD as stated by AS 4482.1–2005. Non-compliance is to be documented in the report and sample to be re-analysed or higher level to be conservatively adopted.
Laboratory analyses	The selected laboratories would comply with the respective ISO 9001 quality assurance programs, be NATA registered for the analysis to be undertaken and perform their own internal QA/QC programs, and would use appropriate detection limits for the analyses to be undertaken.

Item	Objectives
Laboratory Quality Control – Duplicates, spikes, blanks and surrogates – Acceptable Limits	Primary laboratory QA/QC acceptance limits are expected to be as follows: ▪ surrogates: 70% to 130% recovery ▪ matrix Spikes: 70% to 130% recovery for organics or 80%-120% recovery for inorganics ▪ control Samples: 70% to 130% recovery for soil or 80% to 120% recovery for waters ▪ duplicate Samples: <4PQL - +/- 2PQL, 4-10PQL – 0.-25 or 50%RPD, >10PQL – 0-10 or 30%RPD ▪ method Blanks: zero to <PQL.

Table 7-3 Data Quality Indicators (NSW DEC, 2005)

QA/QC Measures	Data Quality Indicators
Precision - A quantitative measure of the variability (or reproducibility) of data	Performance of blind field duplicate sample sets, through calculation of relative percentage differences (RPD); and The RPDs will be assessed as acceptable if less than 50%. RPDs that exceed this range may be considered where: Results are less than 10 times the limits of reporting (LOR); Results are less than 20 times the LOR and the RPD is less than 50%; or Heterogeneous materials or volatile compounds are encountered.
Accuracy - A quantitative measure of the closeness of reported data to the "true" value	Method blanks, which are analysed for the analytes targeted in the primary samples; Matrix spike and matrix spike duplicate sample sets; and Laboratory control samples.
Representativeness - The confidence (expressed qualitatively) that data are representative of each medium present on Site	To ensure the data produced by the laboratory is representative of conditions encountered in the field, the following steps are taken by the laboratory: Blank samples will be run in parallel with field samples to confirm there are no unacceptable instances of laboratory artefacts; Review of relative percentage differences (RPD) values for field and laboratory duplicates to provide an indication that the samples are generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities; and The appropriateness of collection methodologies, handling, storage and preservation techniques will be assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (i.e. volatile loss during transport due to incorrect preservation / transport methods).
Completeness - A measure of the amount of useable data from a data collection activity	In validating the degree of completeness of the analytical data sets acquired during the program the following is considered: Whether standard operating procedures (SOPs) for sampling protocols have been adhered to; and Copies of all COC documentation are reviewed and presented. It can therefore be considered whether the proportion of "useable data" generated in the data collection activities is sufficient for the purposes of the land use assessment.
Comparability - The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.	Given that a reported data set can comprise several data sets from separate sampling episodes, issues of comparability between data sets are reduced through adherence to Standard Operating Procedures (SOPs) and regulator-endorsed or published guidelines and standards on each data gathering activity. In addition the data will be collected by experienced samplers and NATA-accredited laboratory methodologies will be employed in all laboratory testing programs.

8 ASSESSMENT METHODOLOGY

8.1 SOIL INVESTIGATION

The methodologies used to conduct the soil investigation are summarised in **Table 8-1**, with methodologies used to conduct the groundwater investigation summarised in **Table 8-2**.

Table 8-1 Soil Sampling Methodology

Activity/Item	Details
Fieldwork Date	6th and 10th of June, 2014 (Soil investigation works)
Investigation Method	14 boreholes were drilled with a utility mounted solid flight auger drill rig setup. Drilling was continued until the anticipated depth of exploration was reached or until refusal. An additional five boreholes were further drilled, to allow for the installation of groundwater monitoring wells. 4 locations in the vicinity of the wharfs were chosen for sediment sampling
Rationale	14 targeted test locations (BH301 to BH314) were selected based on the findings of previous site investigation (i.e. Stage 2) conducted by M&A in June 2012, with allowance for structural obstacles (e.g. building walls, underground and overhanging services and other physical obstructions in use by existing operating businesses).
Bores Drilled and Target Depth	At this stage it is anticipated that sampling would be continued down to anticipated depth of exploration being 4.5m BGL for the purposes of assessing vapour intrusion risks associated with volatile and semi volatile compounds as well as for the purposes of Acid Sulfate Soil investigation, or 0.5 m beyond the extent of observed contamination, whichever is greater. As Hawkesbury Sandstone of high strength may be present at surface, the drillings may cease due to drill auger refusal, which would be considered appropriate for the purposes of this investigation.
Soil Logging	Stratigraphy and any other relevant information during drilling and the installation of the monitoring wells (if any) will be recorded by an appropriately qualified personnel. Soil classifications and descriptions were based on Unified Soil Classification System (USCS) and Australian Standard (AS) 4482.1-1997. Bore logs are presented in **Appendix B.**
Sample collection	At the following depths: ▪ the surface (~0.0-0.2 m BGL) ▪ above 1 metre BGL (i.e. ~0.2-1.0 m BGL) ▪ between 1.0 and 2.0 metres BGL ▪ between 2.0 and 4.0 metres BGL ▪ and one at 4+ metres BGL ▪ where any changes in lithology (i.e. 'clean' natural soils are encountered) evidence of contamination occurs or elevated photo-ionisation detector (PID) readings area noted. Samples will be collected from the auger / trowel and the sampling equipment will be cleaned with suitable phosphate free detergent and rinsed with distilled water between sampling episodes.
Field screening	All soil samples being collected during the works (apart from those being collected for the analysis of Acid Sulfate Soils) will be screened with a Photo Ionisation Detector (PID), to assess if volatile contaminants are potentially being present.

Activity/Item	Details
Laboratory analyses	Based on the available PID results and field observations, selected soil samples will be analysed in the laboratory. At this stage, it is anticipated that selected primary samples will be analysed for a range of potential contaminants of concern which include: ▪ Heavy Metals allowance 2.5 samples/hole ▪ Total Petroleum Hydrocarbons (TPH) allowance 2.5 samples/hole ▪ Benzene/Toluene/Ethyl benzene/Xylene/Naphthalene (BTEXN) allowance 1.5 sample/hole ▪ Polycyclic Aromatic Hydrocarbons (PAH) 1.5 sample/hole ▪ Organo-Chlorine Pesticides, Organo-Phosphorous Pesticides and Polychlorinated Biphenyls (OCP/OPP/PCB) allowance 1 sample/hole ▪ Phenols allowance 2 sample/hole ▪ Organotins allowance 1 sample/location ▪ Asbestos allowance 1 sample/hole ▪ sPOCAS allowance 3 sample/hole ▪ CEC, pH, EC and Clay Content allowance 0.5 sample/hole In addition to these primary samples, QAQC samples would be analysed as per **Section 9** of this report. The remaining soil samples collected will be kept on hold should further laboratory analysis be required.
Soil Sampling	Soil samples were collected using a hand trowel and placed into clean, laboratory-supplied acid washed, solvent rinsed glass jars using dedicated nitrile gloves.
Decontamination Procedures	The drilling rods were decontaminated between sampling locations with potable water. Stainless steel trowel used was decontaminated using Decon 90, followed by a rinse with potable water, and a final rinse with laboratory prepared volatile rinsate water.
Sample Preservation	Samples were stored in a refrigerated (ice-brick filled) chest, whilst on-site and in transit to the laboratory. All samples were submitted and analysed within the required holding period.
Sampling locations reinstatement after sampling	Soil cuttings were used as backfill for drilled boreholes as the site was in the process of excavation or soon to be excavated. Sampling locations would be reinstated to pre-investigation conditions and be sufficiently compacted to ensure this condition is maintained. Any excess spoil that cannot be returned to the borehole will be placed in drums by the drilling contractor and removed from site for disposal.
Quality Control & Laboratory Analysis	A number of soil samples were submitted for analysis by SGS Laboratories (SGS). QA/QC testing comprised intra-laboratory duplicates ('field duplicates') tested by SGS and inter-laboratory field duplicate tested by Envirolab Services (Envirolab), as well as testing of rinsate, soil trip blank and soil trip spike samples Selected samples were submitted for analysis of previously-identified PCOC.

Table 8-2 Groundwater Sampling Methodology

Activity/Item	Details
Date of Field Work	6th and 10th of June (Well Installation Works) and 23 June 2014 (Groundwater Sampling)
Well Construction	Five (5) Groundwater monitoring wells were installed for the purpose of assessing groundwater quality at the site and to fill in previously identified assessment data gaps (*Ref:* **Section 6**). Well construction was carried out in general accordance with the standards described in the *Minimum Construction requirements for Water Bores in Australia – Edition 3 (2013).* Relative locations of the groundwater monitoring wells are illustrated in **Figure 2**. In summary, the advancement of five soil boreholes (BH301, BH306, BH308, BH311 and BH314) was completed using solid flight auger drilling techniques. The depths of drilling ranged from approximately 3.6 – 6.3 m BGL. The monitoring wells were constructed as follows: • 50 mm, Class 18 PVC threaded, machine-slotted screen and casing, with slotted intervals, with 1.5m to 3m well screen seated from the base of well; • base and top of each well was sealed with a UPVC cap (with an exception of BH314 / MW5 which was

Activity/Item	Details
	left having a 0.5m stickup; • graded sand filter was used within bore annulus to approximately 500mm above top of screen interval; • granular bentonite was applied above annular sand filter to seal the screened interval and drill cuttings were used to backfill the bore annulus to just below ground level; and • surface completion for the wells involved a steel gatic cover set in neat cement and finished flush with the slab level
Well Development	Well development was conducted for each of the newly installed wells following their installation. The wells were left to recharge, prior to well agitation using a dedicated, HDPE disposable bailer, followed by the removal of water and accumulated sediment using a 12V, HDPE submersible bore pump (*Proactive Environmental*, model *Super Twister*). Pumping was continued until no further reduction in suspended sediment was observed (i.e. after removal of between 2 and 3 well volumes). No odours or sheens were observed during the development of these wells.
Well Gauging	The depth to groundwater (SWL) was measured at all onsite wells (MW1 – MW5) prior to sampling. Monitoring wells were gauged for depth to groundwater and a transparent HDPE bailer was used to visually assess the presence of phase separated hydrocarbons (PSH) prior to the commencement of well purging. No PSH was detected within any of the groundwater monitoring wells at the time of sampling.
Well Purging & field groundwater sampling	The groundwater monitoring event involved purging and sampling of all groundwater monitoring wells. The bore purging process involved the setting of a *Well Wizard* (Model) bladder pump to a water intake depth at approximating the vertically central position of the slotted intake interval at each groundwater monitoring bore location. For each monitoring well, groundwater was observed to be brown, brown/grey in colour with poor to good clarity and a high to low sediment load. The *MicroPurge* system incorporates a low density poly-ethylene (LEISE) pump bladder, and a Teflon-lined LEISE sample delivery tube. Both the pump bladder and the delivery tube were replaced, prior to each new monitoring well being sampled. The system used for this investigation also included a *MicroPurge QMP15* controller, which employed pressurised carbon dioxide gas to regulate groundwater flow to around 150 ml per minute during sampling. A water level meter was used to ensure that the regulated flow rate was not causing any drawdown of water level during the well purging process. Field physicochemical parameter measurements for water temperature, pH, Electric Conductivity (EC), Dissolved Oxygen (DO) and Oxidation/Reduction Potential (ORP) were recorded during well purging. All of the field data being obtained during the sampling event of each monitoring well is being presented in **Appendix B,** alongside the calibration certificates for all of the equipment being used. Once consistent field parameter measurements were observed on discharging purge waters, i.e. noted to have occurred after approximately 2 to 3 well volumes of groundwater had been purged, it was considered to indicate that representative groundwater quality had been achieved with final measurements being recorded and representative groundwater sample was collected by direct transfer to the laboratory supplied containers. More details regarding sample handling during the sampling process, including sample preservation methods and the types of sampling containers used, are provided in **Sample Preservation** section of this table below. It should be noted that samples to be tested for heavy metals (inorganic) were filtered in the field even as slight visual signs of suspended matter were observed within the samples. Final purge results including field monitoring data of all groundwater parameters are summarised in **Table 10-3**.
Decontamination Procedure	Decontamination was not required on most sampling equipment as it was dedicated to each individual well. The water level probe and exterior of the water quality kit probes were washed in a solution of potable water and Decon 90, followed by a rinse of potable water and a final rinse of laboratory prepared deionised volatile water, between measurements at different sampling locations.
Sample Preservation	Sample containers were supplied by the laboratory with the following preservatives: • one, 1 litre amber glass, acid-washed and solvent-rinsed bottle; • two, 40ml glass vials, pre-preserved with dilute hydrochloric acid, Teflon-sealed; and • one 250mL, HDPE bottle, pre-preserved with dilute nitric acid (1 mL). Samples for metals analysis were field-filtered using 0.45 µm pore-size filters. All containers were filled with sample to the brim then capped and stored in ice-brick filled chests on-site and during transit to the laboratory.

Activity/Item	Details
Sample Transport	After sampling, refrigerated sample chests were transported to SGS Australia Pty Ltd using strict Chain-of-Custody (COC) procedures. Inter-laboratory duplicate (ILD) samples were forwarded to Envirolab Services Pty Ltd (Envirolab) for inter-laboratory QA/QC analysis. A Sample Receipt Advice (SRA) was provided by each laboratory to document sample condition upon receipt. Copies of SRA and COC certificates are presented in **Appendix E**.

9 DATA QUALITY ASSESSMENT

9.1 QUALITY ASSURANCE PROGRAMME

In order to satisfy the objectives of the environmental site assessment (ESA) works, Environmental Investigations (EI) implemented a quality assurance programme, including:

- The use of appropriately qualified / trained Environmental professional staff with over ten years of continuous relevant experience in the assessment and management of contaminated sites, to carry out the environmental site assessment investigation works;
- Calibration of equipment prior to application on site and recording the results of the calibration in appropriate site documentation.
- Appropriate storage (esky and ice bricks) and handling of quality control (QC) samples received from the laboratories for use on site, prior to and during ESA investigation works;
- Undertaking appropriate equipment decontamination and use of a new pair of nitrile gloves by site personnel prior to the collection of each soil sample directly from the push tube liner or drill rig auger;
- Use of a cooler with ice to store collected samples prior to and during transport to the laboratories;
- The collection and analysis of field quality control samples during the ESA investigation works;
- The use of chain of custody (CoC) procedures to ensure the traceability of sample transport and handling; and
- The use of laboratories accredited by the National Association of Testing Authorities (NATA) for the analysis of soil samples collected during the monitoring well installation works.

9.2 ADOPTED ASSESSMENT CRITERIA

The Soil Investigation Levels (SILs) that would be used as the action levels for the assessment are summarised in the analytical tables, in **Appendix E**. Analytical methods have been selected to be relevant for the selected SILs with respect to contaminant detection limits and these are presented in detail in **Appendix A, Table QC3**.

The Soil Investigation Levels (SILs) that would be used as the action levels for the assessment were the:

- NEPC (2013) Schedule B1 – *Health-Based Investigation Levels for residential with minimal opportunities for soil access; which includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments (HIL-B)*;
- NEPC (2013) Schedule B1 – *Soil Health Screening Levels (HSLs) for vapour intrusion* (for TPHs F1 and F2, BTEX and Naphthalene);
- NEPC (2013) Schedule B1 – *Ecological Screening Levels (ESLs) for TPH fractions F1 – F4, BTEX and Benzo(α)pyrene in soil*;
- NEPC (2013) Schedule B1 – *Ecological Investigation Levels (EILs) for Heavy metals, DDT and Napthalene in soil.*
- NEPC (2013) Schedule B1 – *Management Limits for TPH fractions F1 – F4*; and
- NEPC (2013) Schedule B1 – *Health Screening Levels for asbestos contamination in soil (Asbestos HSLs).*

- For the sediment samples taken along the foreshore interim sediment quality guideline (ISQG) for low and high (ANZECC, 2000) have been adopted.

From listed added concentration limits (ACLs) assuming the silty sand and sandy clays of the following typical properties: pH 7, CEC 10 cmolc/kg, clay content 2.5%. Ambient background concentration (ABC) levels were not determined for the site, and therefore have not been applied. The EIL assessment is considered to be conservative. Generic levels have been applied for lead (generic ACL) and arsenic (generic EIL).

Calculated values are displayed within summarised laboratory analytical tables, presented in **Appendix E** of this report.

The Groundwater Investigation Levels (GILs) that would be used as the action levels for the assessment are summarised in the analytical tables presented in **Appendix E**. Analytical methods have been selected to be relevant for the selected GILs with respect to contaminant detection limits.

The Groundwater Investigation Levels (GILs) that would be used as the action levels for the assessment were the:

- NEPC (2013) Schedule B1 - Groundwater Health Screening Levels (HSLs) for vapour intrusion (for TPHs F1 and F2, BTEX and Naphthalene);
- NEPC (2013) Schedule B1 – Groundwater Health-Based Investigation Levels (GIL) for fresh and marine waters in line with the ANZECC (2000); and
- ANZECC and ARMANZ (2000) Guidelines for Fresh and Marine Water Quality, National Water Quality Management Strategy.

9.3 QUALITY CONTROL PROGRAM

For the purpose of assessing the quality of data presented in this ESA, EI collected field QC samples for analysis. The primary laboratory, SGS Australia Pty Ltd (SGS) and secondary laboratory, Envirolab Services Pty Ltd (Envirolab) also prepared and analysed QC samples. Details of the field and laboratory QC samples are provided in **Table 9-2** and **Table 9-2,** with the allowable acceptance ranges for the data presented in **Table 9-1** below.

Table 9-1 Sampling Methodology

Data Quality Objective	Data Quality Indicator	Acceptable Range
Accuracy	Field – Rinsate Blank (laboratory prepared) & Trip Blanks Laboratory – Laboratory control spike and matrix spike	70 – 130 % recovery Prescribed by the laboratories
Precision	Field – Blind replicate and spilt duplicate Laboratory – Laboratory duplicate and matrix spike duplicate	< 30 % relative percentage difference (RPD [%]) Prescribed by the laboratories
Representativeness	All samples collected in accordance with SAQP	-
Completeness	Completion (%)	-

Calculation of Relative Percentage Difference (RPD)

The RPD values were calculated using the following equation:

$$RPD = \frac{([C_O - C_R] \times 100)}{\frac{(C_O + C_R)}{2}}$$

C_O = Concentration obtained from the primary sample.
C_R = Concentration obtained from the blind replicate or split sample.

Calculation of Spike Recovery

The trip spike sample recovery values were calculated using the following equation:

$$\frac{X}{T} \quad x\ 100\ \%$$

X = Observed Value
T = True Value

9.3.1 Field QA/QC Data Evaluation

The field quality assurance/quality control (QA/QC) samples collected during the ESA works were as follows:

- Blind field duplicate;
- Inter laboratory duplicate;
- Trip blank;
- Trip spike; and
- Rinsate Blank.

The results of the QA/QC samples including the calculated RPD values are presented in **Table 9-2.**

Blind Field Duplicate

Soils:

One blind field duplicate (BFD) samples, being sample B300 were collected from the primary sample BH314-1 consecutively. The preparation of the BFD sample involved the collection of a bulk quantity of soil from the same sampling point without mixing, before dividing the material into identical sampling vessels. The duplicate sample was then presented blind to the primary laboratory (SGS) to avoid any potential analytical bias. The BFD was analysed for TPH, BTEX and selected heavy metals with the RPD values calculated found to be within the Data Acceptance Criteria (**Ref. Appendix A, Table QC5**), with the exception Arsenic – RPD 61.54%. The identified exceedences were considered to be as a result of small differences in low reported concentrations of the contaminants within an un-homogenous fill strata. Therefore, as the exceedences are considered to be minor, and are not considered to impact the quality of the data set. Overall, the minor exceedances, and further calculated RPDs indicated that the samples collected were representative of the soils present at the respective sampling locations.

Groundwater:

A single BFD sample, being sample GWB100, was collected from the primary sample GW2-1 taken from groundwater monitoring well MW2. The preparation of the BFD sample involved the collection of a bulk quantity of groundwater from the same monitoring well location without mixing, before dividing the material into identical sampling bottles. The duplicate sample was then presented blind to the primary laboratory (SGS) to avoid any potential analytical bias. The BFD was analysed for TPH, BTEX and selected heavy metals with the RPD values calculated found to be within the Data Acceptance Criteria (**Ref. Appendix A, Table QC5)**. With the data as a whole considered to be representative of the groundwater present at the respective sampling locations.

Inter Laboratory Duplicate

Soils:

One (1) inter laboratory duplicate (ILD) sample, being sample I300, was collected from the primary samples BH314-2. The preparation of the inter laboratory samples were identical to the BFD samples as described above, and analysed for TPH, BTEX and selected heavy metals. The RPD values calculated for the ILD samples were found to be within the Data Acceptance Criteria (**Ref. Appendix A, Table QC5**). Based on the calculated RPD %, it is considered that the samples collected were representative of the soils present at the respective sampling locations.

Groundwater:

One (1) inter laboratory duplicate (ILD) sample, being sample GWI100, was collected from the primary sample GW2-1 taken from groundwater monitoring well MW2. The preparation of the GWI100 sample was identical to the BFD sample as described above, and analysed for TPH, BTEX and selected heavy metals. The RPD calculations were considered to be representative of the groundwater present at the site.

Trip Blank

Two trip blank (TB) samples, prepared by the primary laboratory, were used for the soil sampling investigation, and analysed for BTEX by the primary laboratory. The soil TB sample results were reported below the laboratory LOR, indicating that ideal sample transport and handling conditions were achieved.

Rinsate Blank

Two rinsate blank (RB) samples were submitted to the primary laboratory for TPH, BTEX and selected heavy metals. The RB sample results were reported below the laboratory LOR, with the exception of zinc, and it was therefore concluded that decontamination procedures performed during the field works had been effective.

Assessment of Field QA/QC Data

All samples, including field QC samples, were transported to the primary and secondary laboratories under strict Chain-of-Custody conditions and appropriate copies of relevant documentation were included in the respective reports.

The overall completeness of documentation produced under the field program of the subject assessment was considered to be adequate for the purposes of drawing valid conclusions regarding the environmental condition of the site.

Based on the results of the field QA/QC data, EI considered the field QA/QC programme carried out during the ESA works to be appropriate and the results to be acceptable, and that variable groundwater conditions may be present at the site.

9.3.2 Laboratory QA/QC Data Evaluation

Details of the laboratory QA/QC data is provided in the *Laboratory Analytical Reports* (**Appendix D***)*. As part of their NATA accreditation, the primary and secondary laboratories carried out a comprehensive QA/QC assessment.

EI note that soil samples were analysed within the holding times prescribed by the laboratories.

The laboratory QA/QC samples collected during the ESA works were as follows:

- Laboratory duplicate (DUP);
- Method blank (MB);

- Laboratory control spike (LCS);
- Matrix spike (MS); and
- Matrix spike duplicate (MSD).

No QC outliers were reported by the primary or secondary laboratories.

The laboratories used for this assessment used certified methods pursuant with their respective NATA accreditations. All laboratory duplicates (DUP), method blanks (MB), laboratory control spikes (LCS), matrix spikes (MS) and matrix spike duplicates (MSD) were compliant with internal laboratory recovery limits. Due to the rigorous NATA accreditation process and the laboratory QC sample results reviewed, EI considered that the results were within acceptable control limits specified by SGS and Envirolab, in accordance with their NATA accreditation. Therefore the integrity of the analytical data was considered to be suitable for use.

9.4 OVERALL DATA ASSESSMENT

The QA/QC assessment of the field and laboratory data indicated that for the purpose of the ESA works, the results of the field and laboratory QA/QC programme were considered acceptable for use as outlined in the data assessment below.

9.4.1 Accuracy

The blank recovery results for the field (laboratory prepared) RB/TB samples were within the acceptable range, therefore EI considered that the accuracy of the overall field QA/QC data assessed during the ESA works was kept.

9.3.2 Precision

The inter and intra lab sample results for the field blind and inter-laboratory samples were within an acceptable range, with all outliers able to be explained. EI considered that the precision of the overall field QA/QC data assessed during the ESA works was kept, however some variability within groundwater present at the site may be present.

9.3.3 Representativeness

All fieldworks were carried out in accordance with the relevant EI procedures and NSW guidance, therefore EI considered that the precision of the overall field QA/QC data assessed during the ESA works was kept.

9.3.4 Completeness

EI has considered the overall completeness of the data set and assessed it is suitable for use in this ESA.

Table 9-2 Summary of laboratory results for field QC samples (Soil + Groundwater) and calculated relative percentage differences (%RPD)

Type	Sample Identification	Sample Description	Date	TRH				BTEX					Heavy Metals							
				F1*	F2**	F3 (>C_{16} - C_{34})	F4 (>C_{34} - C_{40})	Benzene	Toluene	Ethylbenzene	Total Xylenea	Naphthalene	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
Prime	BH314-1	Fill Material	10.06.2014	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	<3	<0.3	7	110	250	0.13	2.5	300
Intra	B300	Replicate of BH314 - 1	10.06.2014	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1	5	<0.3	6.3	120	340	0.2	2.5	430
RPD				***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***61.54***	***0.00***	***10.53***	***8.70***	***30.51***	***42.42***	***0.00***	***35.62***
Inter	I300	ILD of BH2-1	10.06.2014	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	<1	6.7	<1	310	<1	<0.1	88	2500
RPD				***ND***	***ND***	***51.9***	***ND***	***ND***	***ND***	***ND***	***ND***	***ND***	***0.00***	***0.00***	***0.00***	***6.67***	***0.00***	***0.00***	***1.14***	***4.08***
Blanc	Trip Blank	Sand	10.06.2014	<25	NA	NA	NA	<0.1	<0.1	<0.1	<0.3	<0.1	NA	NA	NA	NA	NA	NA	NA	NA
Spike	Trip Spike	Sand	10.06.2014	NA	NA	NA	NA	[63%]	[70%]	[76%]	76%	NA	NA	NA	NA	NA	NA	NA	NA	NA
Rinsate	R300	Sand	06.06.2014	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<0.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5
Rinsate	R301	Sand	10.06.2014	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<0.5	<1	<0.1	<1	<1	<1	<0.1	<1	15

Note: all values are in units of mg/kg.
NA = 'Not Analysed' Analysis was not performed
ND = RPD calculation was not possible to perform due to the non-detection in both samples in duplicate pair. Where one of the samples in the duplicated pair showed detectable concentrations, the PQL of the undetected duplicate was applied for the RPD calculation.

32.17	RPD within the 30-50% range referenced from AS4482.1 (2005)
82.35	RPD exceeds 30-50% range referenced from AS4482.1 (2005)

Table 9-3: Summary of laboratory results for field QC samples (Groundwater) and calculated relative percentage differences (%RPD)

Type	Sample Identification	Sample Description	Date	TRH				BTEX					Heavy Metals							
				F1*	F2**	F3 (>C_{16} - C_{34})	F4 (>C_{34} - C_{40})	Benzene	Toluene	Ethylbenzene	Total Xylenea	Naphthalene	As	Cd	Cr	Cu	Pb	Hg	Ni	Zn
Prime	GW2-1	Groundwater	23.06.14	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<0.5	<1	<0.5	<1	6.7	<1	310	<1	<0.1
Intra	GWB100	BFD of GW2-1	23.06.14	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<0.5	<1	<0.5	<1	6.7	<1	290	<1	<0.1
RPD				***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***0.00***	***6.67***	***0.00***	***0.00***
Inter	GWI100	ILD of GW2-1	23.06.14	<25	<50	<100	<100	<0.2	<0.5	<1	<3	<1	<4	<0.4	7	110	350	0.2	3	410
RPD				***24.5***	***ND***	***ND***	***ND***	***ND***	***ND***	***ND***	***ND***	***ND***	***NA***	***NA***	***0.00***	***0.00***	***33.33***	***42.42***	***18.18***	***30.99***
Blanc	TB	Water		***<50***	***NA***	***NA***	***NA***	<0.5	<0.5	<0.5	<0.5	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***	***NA***
Rinsate	R1	De-ionised & Organic Rinsate Water	23.06.14	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<0.5	<1	<0.1	<1	<1	<1	<0.1	<1	<5
Rinsate	R2	De-ionised & Organic Rinsate Water	23.06.14	<50	<60	<500	<500	<0.5	<0.5	<0.5	<1.5	<0.5	<1	<0.1	<1	<1	<1	<0.1	<1	6

Note: all values are in units of µg/L.
NA = 'Not Analysed' Analysis was not performed
ND = RPD calculation was not possible to perform due to the non-detection in both samples in duplicate pair. Where one of the samples in the duplicated pair showed detectable concentrations, the PQL of the undetected duplicate was applied for the RPD calculation.

32.17	RPD within the 30-50% range referenced from AS4482.1 (2005)
82.35	RPD exceeds 30-50% range referenced from AS4482.1 (2005)

10 RESULTS AND DISCUSSION

10.1 SOIL INVESTIGATION

10.1.1 Soil Sampling and Field Observations

Soil samples were obtained from the test bores BH301 – BH314 at various depths ranging between 0.0m to 6.3 m BGL. All examined soils were evaluated on a qualitative basis for odour and visual signs of contamination (e.g. hydrocarbon odours, oil staining, petrochemical filming, asbestos fragments, ash, charcoal, etc.) and on the basis of the field-work findings, the following observations were noted.

- No visual and olfactory evidence of hydrocarbon impacts were noted at borehole locations investigated during this assessment, except for hydrocarbon odour in fill material at BH307;
- PID VOC concentrations were detected from soil samples collected from boreholes BH301 – BH314, ranging from 38.0 – 278 parts per million (ppm), with the highest result obtained from sample BH314-1. Analysis of soil samples with the highest PID readings at each soil sampling location was completed by the laboratory; and
- Fibrous cement sheeting, charcoal, ash or slag was not observed in examined fill soils.

Borehole logs were prepared for all test holes and included sample descriptions and are presented in **Appendix B**.

10.1.2 Sub-Surface Conditions

On the basis of observations made during the drilling investigation, a summary of site sub-surface conditions is presented in **Table 10-1**.

Table 10-1 General site geology

Location of Sample	General Description
Eastern section of the site, inclusive of boreholes BH304, BH306, BH307, BH308, BH309, BH310, BH311 and BH312	Fill: Concrete, bitumen, or timberboard, overlying silty sand and gravel, and/or crushed sandstone, dark brown to grey, ranging from approximately 0.05 to 2.2m BGL, overlying Bedrock: shallow depths of Hawkesbury Sandstone, grey yellow.
Western portion of the site, inclusive of boreholes BH302, BH303, BH314	Fill: Bitumen and/or Silty sand and gravel and/or crushed sandstone, dark brown to grey ranging from approximately 0.0 to 1.2m BGL, overlying Residual Soils: Sandy clays, clayey sands, and sands, brown/red/orange/grey/yellow, overlying Bedrock: Hawkesbury Sandstone, grey/yellow.

10.1.3 Soil Laboratory Results

Tabulated laboratory analytical results for the representative discrete soil samples are summarised in **Appendix H** and presented in detail in copies of the laboratory analytical reports in **Appendix E**. Tabulated laboratory analytical results also include the adopted soil criteria.

Heavy Metals

Results of soil samples collected from soil test boreholes BH301 to BH314 reported all concentrations of the screened heavy metals to be below the adopted human health based criteria, with the exception of:

- Sample BH307-1 had a lead concentration (1400 mg/kg) that exceeded HIL B (1,200 mg/kg).

Results of soil samples collected from soil test boreholes BH301 to BH314 reported all concentrations of the screened heavy metals to be below the ecological based criteria, with the exception of:

- Sample BH306-1 had a zinc concentration (17,000 mg/kg) that exceeded the EIL (190 mg/kg).
- Sample BH307-1 had a zinc concentration (18,000 mg/kg) that exceeded the EIL (190 mg/kg).
- Sample BH307-3 had a zinc concentration (1,300 mg/kg) that exceeded the EIL (190 mg/kg).
- Sample BH310-1 had a zinc concentration (1500 mg/kg) that exceeded the EIL (190 mg/kg).
- Sample BH313-1 had a zinc concentration (1,800 mg/kg) that exceed the EIL (190 mg/kg).

TRHs and BTEX

Results of soil samples collected from soil test boreholes BH301 to BH314 reported concentrations of screened TRH fractions to be below the adopted human health based criteria with the exception:

- Sample BH307-1 had an F2 concentration (140 mg/kg) that exceeded the HIL B (110 mg/kg)
- Sample BH313-2 had an F2 concentration (160 mg/kg) that exceeded the HIL B (110 mg/kg)

Results of soil samples collected from soil test boreholes BH301 to BH314 reported concentrations of screened TRH fractions to be below the adopted ecological based criteria with the exception of:

- Sample 307-1 had a F2 concentration (140 mg/kg) that exceeded the ESL of (120 mg/kg)
- Sample 306-4 had a F3 concentration (370 mg/kg) that exceeded the ESL of (300 mg/kg)
- Sample 307-1 had a F3 concentration (450 mg/kg) that exceeded the ESL of (300 mg/kg)
- Sample 313-1 had a F3 concentration (540 mg/kg) that exceeded the ESL of (300 mg/kg)
- Sample 313-3 had a F3 concentration (490 mg/kg) that exceeded the ESL of (300 mg/kg)

PAHs

Results of soil samples collected from soil test boreholes BH301 to BH314 reported concentrations of the screened PAH compounds to be below the adopted human health and ecological based criteria.

Asbestos

Results of soil samples collected from soil test boreholes BH301 to BH314 did not report detectable asbestos concentrations or traces of respirable fibres were identified in the tested soil samples, except for BH307-1, where asbestos fibres were identified in fragmented cement sheeting.

Other Organics

Non-detectable concentrations of the screened OCP, OPP or PCB compounds were identified in samples, with all laboratory quantitation limits being within the corresponding HILs. Total phenolics were reported in some samples, however at concentrations below adopted HIL criteria.

10.1.4 Sediment Laboratory Results

Results of sediment samples SS1 to SS4 reported all concentrations of the screened heavy metals to be below the adopted interim sediment quality guideline (ANZEC, 2000) for ISQG-Low with the exception of:

- Sample SS1 had an arsenic concentration (20 mg/kg) equal to the ISQG-low (20 mg/kg).

- Sample SS1 had a chromium concentration (100 mg/kg) that exceeded the ISQG-low (80 mg/kg).
- Sample SS3 had a chromium concentration (95 mg/kg) that exceeded the ISQG-low (80 mg/kg).
- Sample SS4 had a chromium concentration (100 mg/kg) that exceeded the ISQG-low (80 mg/kg).
- Sample SS1 had a copper concentration (160 mg/kg) that exceeded the ISQG-low (65 mg/kg).
- Sample SS2 had a copper concentration (72 mg/kg) that exceeded the ISQG-low (65 mg/kg).
- Sample SS3 had a copper concentration (130 mg/kg) that exceeded the ISQG-low (65 mg/kg).
- Sample SS4 had a copper concentration (140 mg/kg) that exceeded the ISQG-low (65 mg/kg).
- Sample SS1 had a lead concentration (160 mg/kg) that exceeded the ISQG-low (50 mg/kg).
- Sample SS2 had a lead concentration (85 mg/kg) that exceeded the ISQG-low (50 mg/kg).
- Sample SS3 had a lead concentration (150 mg/kg) that exceeded the ISQG-low (50 mg/kg).
- Sample SS4 had a lead concentration (160 mg/kg) that exceeded the ISQG-low (50 mg/kg).
- Sample SS1 had a mercury concentration (0.48 mg/kg) that exceeded the ISQG-low (0.15 mg/kg).
- Sample SS2 had a mercury concentration (0.21 mg/kg) that exceeded the ISQG-low (0.15 mg/kg).
- Sample SS3 had a mercury concentration (0.48 mg/kg) that exceeded the ISQG-low (0.15 mg/kg).
- Sample SS4 had a mercury concentration (0.47 mg/kg) that exceeded the ISQG-low (0.15 mg/kg).
- Sample SS1 had a zinc concentration (520 mg/kg) that exceeded the ISQG-low (200 mg/kg).
- Sample SS2 had a zinc concentration (240 mg/kg) that exceeded the ISQG-low (200 mg/kg).
- Sample SS3 had a zinc concentration (520 mg/kg) that exceeded the ISQG-low (200 mg/kg).
- Sample SS4 had a zinc concentration (560 mg/kg) that exceeded the ISQG-low (200 mg/kg).

Results of sediment samples SS1 to SS4 reported all concentrations of the screened organotine to be below the adopted interim sediment quality guideline (ANZEC, 2000) for ISQG-Low with the exception of:

- Sample SS1 had an Tributyl tin concentration (35 ugSN/kg) equal to the ISQG-high (5 ugSN/kg).
- Sample SS2 had an Tributyl tin concentration (17 ugSN/kg) equal to the ISQG-high (5 ugSN/kg).
- Sample SS3 had an Tributyl tin concentration (16 ugSN/kg) equal to the ISQG-high (5 ugSN/kg).
- Sample SS4 had an Tributyl tin concentration (35 ugSN/kg) equal to the ISQG-high (5 ugSN/kg).

Results of sediment samples SS1 to SS4 reported all concentrations of the screened heavy metals and organotin to be below the adopted interim sediment quality guideline (ANZEC, 2000) for ISQG-high with the exception of:

- Sample SS1 had a zinc concentration (520 mg/kg) that exceeded the ISQG-high (410 mg/kg).
- Sample SS2 had a zinc concentration (240 mg/kg) that exceeded the ISQG-high (410 mg/kg).
- Sample SS3 had a zinc concentration (520 mg/kg) that exceeded the ISQG-high (410 mg/kg).
- Sample SS4 had a zinc concentration (560 mg/kg) that exceeded the ISQG (410 mg/kg).

10.1.5 Discussion of Soil and Sediment Results

Soils

Soil results analysed for BTEX, PAH, OC/OP pesticides, PCB, and total phenolics were reported at concentrations below adopted investigation criteria, or below LOR. Lead, asbestos, and F2 TRH criteria were reported in BH307-1, adjacent to the

Parramatta River foreshore, exceeding adopted investigation criteria. Remaining concentrations of heavy metals, asbestos, and TRH were reported below adopted investigation criteria at remaining locations.

We note that the TRH impacts, though below adopted HIL criteria, were identified at various locations onsite, particularly at borehole locations BH306, BH307, BH311, and BH313 in proximity to the main boat shed / warehouse of the site. TRH impacts were also identified at various depths within the soil and weathered sandstone profile at these locations. With the identification of TRH impacts in groundwater, it is possible that TRH sources in soils in this area of the site may be contributing to impacts observed in groundwater, and additionally may act as possible soil vapour sources.

Sediments

Laboratory analytical results indicate presence of PAH, heavy metals, DBT and TBT contamination of sediments from the subtidal zone from SS1 to SS4. Elevated heavy metal concentrations were observed at all testing locations. Zinc occurred at high concentrations presenting the greatest risk to benthic biota, slightly exceeding ISQG High trigger values. Remaining heavy metals, except nickel and cadmium, occurred at concentrations exceeding ISQG – low trigger values.

PAH impacts to sediments only occurred in SS1, and concentrations did not exceed ISQG – High trigger values, however marginally exceeded ISQG – low trigger values. TBT was identified at all sampling locations at concentrations below ISQG – High trigger values, but exceeding ISQG – low trigger values

The findings of this investigation indicates that the highest concentrations of heavy metals, PAHs, Organotins, as detailed by Martens (2012), typically occur in the inter-tidal zone within sediments in close proximity to the foreshore and areas of historic site operations. As such, concentrations of heavy metals, PAHs, Organotins are likely to decline with distance from foreshore areas.

10.2 ACID SULFATE SOIL ASSESSMENT

3 soil borehole locations were selected for acid sulfate soil assessment, being BH306, BH311, and BH314 (all taken between the depths of 1.4 m and 3.4 m BGL). Selected samples were laboratory analysed for suspended peroxide oxidation combined acidity and sulfate (sPOCAS) in accordance with Section 2 *ASSs Assessment Guidelines*, of the ASSMAC (1998) *Acid Sulfate Soils Manual 1998* to confirm the presence/absence of ASSs.

All laboratory analyses were conducted on discrete (un-composited) samples using NATA-registered methods. The subsequent results are summarised in **Table 10-2** and are presented in detail in a copy of the laboratory analytical report, which is provided in **Appendix D**.

EI assume that volumes greater than 1,000 m^3 are to be removed, with these volumes used in accordance with the ASSMAC (1998) guidance.

Table 10-2 Summary of sPOCAS Laboratory Analysis for Acid Sulfate Soils

ANALYTE	AS306-2 (1.4m BGL)	AS306-3 (1.9m BGL)	AS306-4 (2.4m BGL)	AS306-5 (3.4m BGL)	AS311-1 (1.4m BGL)	AS314-2 (1.4m BGL)	AS314-4 (2.4m BGL)	AS314-6 (3.4m BGL)	ASSMAC (1998) Criteria
pH KCl	9.5	9.0	9.3	9.3	7.4	4.9	4.9	4.8	<4 [1]
pH OX	**9.8**	**7.8**	**8.2**	**8.5**	**7.3**	**1.9**	**2.1**	**2.1**	<3.5 [2]
Change	-0.30	**1.20**	**1.10**	0.80	0.10	**3.00**	**2.80**	**2.70**	≤Δ1.0[2]
Total Actual Acidity (mol H+/tonne) - TAA	<5	<5	<5	<5	<5	17	12	16	NR
Total Potential Acidity (mol H+/tonne) - TPA	<5	<5	<5	<5	<5	**1185**	**457**	**514**	18
Total Sulfidic Acidity (mol H+/tonne) - TSA	<5	<5	<5	<5	<5	**1168**	**444**	**498**	18
KCl extractable sulfur (% w/w) - S_{KCl}	0.013	0.028	0.018	0.017	<0.005	0.090	0.056	0.073	NR
peroxide sulfur (% w/w) - S_P	0.018	0.21	0.075	0.075	0.015	1.8	0.80	0.90	NR
peroxide oxidisable sulfur (% w/w) - S_{POS}	<0.005	**0.18**	**0.058**	**0.058**	**0.013**	**1.7**	**0.74**	**0.83**	0.03 [1]

Notes:

	Highlighted values indicates detected value exceeds adopted threshold.
ASSMAC criteria	Action Criteria that trigger the need to prepare an ASS management plan, derived from Table 4.4, Section 2, ASSs Assessment Guidelines (ASSMAC, 1998); Soil textures were deemed coarse– sands to loamy sands, the closest representation of material properties on site. Apply for cases where more than 1000 tonnes of soils are to be disturbed.
NR	No recommended soil assessment criteria are currently available for the indicated parameter(s).
1	For Actual Acid Sulfate Soil.
2	Indicative value only, for Potential Acid Sulfate Soil

Non-Oxidised and Oxidised pH Testing

Non-oxidised (KCl) pH testing and oxidised (Ox) pH testing were conducted. For all tested samples, the pH_{KCl} readings were above 4, the threshold below which is indicative of actual ASSs. Laboratory results show that all samples tested for (Ox) pH are above 3.5, except for samples collected from BH314, which strongly indicate the presence of potential ASSs. This data suggested that the likelihood of the presence of potential acid sulfates is high, within the site soils tested in proximity to BH314.

Acid Trail

For all of the tested samples, the potential acid risks from un oxidised compounds were below the criteria, with the majority of samples reported as non-detect. The "acid trails" detected levels of total sulfidic acidity (TSA) and total potential acidity (TPA) being reported as greater than 18 moles H^+ per tonne of soil (the corresponding Action Criterion where more than 1000 tonnes of soil is disturbed being 18 mol H^+/tonne), within soil samples collected at BH314indicating the potential for acid sulfate soils to be present.

Sulfur Trail

Peroxide oxidisable sulfur (S_{POS}) was detected in soils from locations BH306, BH311 and BH314, confirming potential for ASS to be present at the site, within soils in proximity to the foreshore, from 1.4m BGL.

Potential Effects by the Proposed Redevelopment

The results of this assessment indicate the presence of ASS at the site for soils on the southern and eastern perimeter of the site, in areas where alluvial or estuarine soils are present and within sandstone encountered at greater depths. It is recommended that an acid sulphate soils management plan be prepared to outline the implementation of suitable construction management measures as part of future development application for building works.

10.3 GROUNDWATER INVESTIGATION

10.3.1 Groundwater Field Quality Parameters

Field observations are documented within the borehole logs in **Appendix B**, and the field data sheets produced during well purging are attached as **Appendix B**. No odours or sheens were observed in any of the groundwater monitoring wells during groundwater sampling, except for MW4, which present a strong, unrecognisable odour. Phase-separated hydrocarbons (PSH) were not detected within any of the wells. The wells were all noted to be slightly turbid sampling.

Field parameters including pH, electrical conductivity (EC) and dissolved oxygen (DO) were measured during groundwater sampling and are summarised in **Table 10-3** below.

Table 10-3 Groundwater Field Parameters

Sample ID	Date	Depth to Water (m BTOC)	Temp (°C)	pH	Electrical Conductivity (µs/cm)	Dissolved Oxygen (mg/L)	Redox (mV)
MW1	23.06.14	4.149	18.7	5.95	821	0.75	-32
MW2	23.06.14	1.143	17.5	6.65	18,330	3.5	30
MW3	23.06.14	1.429	18.1	6.64	6,810	5.8	-14
MW4	02.07.14	1.158	NA	NA	NA	NA	NA
MW5	23.06.14	1.109	17.5	6.22	1,559	0.21	48

The majority of the water was found to be slightly acidic and fresh to brackish. The parameters identified within these wells are within excepted ranges for groundwater present within Hawkesbury Sandstone

10.3.2 Site Hydrogeology and Groundwater Flow

Groundwater is expected to occur in the underlying residual soil material and in the underlying sandstone fractures and bedding planes and flow toward Parramatta River. Furthermore, at the southern boundary of the site groundwater is expected to be shallow, and within the estuarine muds and sands located within this part of the site.

10.3.3 Groundwater Analytical Results

Laboratory analytical results for all groundwater samples collected are summarised in **Appendix E**, which also includes the GILs that were adopted for the assessment. Copies of Laboratory Analytical Reports are also attached in **Appendix D**.
In summary, all reported concentrations of the tested contaminants were found to be below the adopted criteria all wells present at the site, with the exception of the following:

- Cadmium concentrations exceeded marine GILs in MW2, with a maximum concentration of 6.7 µg/L;
- Chromium concentrations exceeded marine GILs in MW4, with a maximum concentration of 57 µg/L;
- Copper concentrations exceeded marine GILs within monitoring wells MW2, MW3, MW4 and MW5, with a maximum concentration of 310 µg/L;
- Nickel concentrations exceeded marine GILs within monitoring wells MW1, MW2, MW3 and MW5, with a maximum concentration of 88 µg/L;
- Zinc concentrations exceeded marine GILs within monitoring wells MW1, MW2, MW3, MW4 and MW5, with a maximum concentration of 2,500 µg/L;
- F1 TRH (98 µg/L), F2 TRH (790 µg/L), and F3 TRH (1,400 µg/L) exceeded adopted GILs within monitoring wells MW4; and
- F3 TRH (1,600 µg/L) exceeded adopted GILs within monitoring wells MW5.

10.3.4 Discussion of Groundwater Results

Concentrations of contaminants in background well, MW1, indicates groundwater moving on to site from up-gradient generally contains heavy metals at concentrations below LOR, except for nickel and zinc, with organic contaminants (i.e. hydrocarbons, OC/OP pesticides, PCBs) also at levels below LOR. Background concentrations of nickel (47 µg/L) and zinc (69 µg/L) reported in MW1 was noted to exceed investigation criteria.

Some heavy metal concentrations (i.e. cadmium, chromium, copper, nickel and zinc) in onsite wells MW2, MW3, MW4, and MW5 exceeded the GILs adopted for this assessment. Significant groundwater contamination was however identified at MW2 where zinc (2,500 µg/L) and copper (310 µg/L) exceed GILs by two orders of magnitude, and cadmium exceed adopted GILs by one order of magnitude, and present a potential risk of harm to the aquatic ecosystems. Other elevated concentrations of heavy metals within the monitoring well field, while in excess of adopted GILs, are generally at low concentrations or are consistent with background water concentrations identified at MW1.

Hydrocarbon concentrations of F1 (98 µg/L), F2 (790 µg/L), and F3 (1,400 µg/L) TRH in MW4, and F3 (1,600 µg/L) TRH in MW5 were identified to exceed adopted GILs for marine ecosystems within the main boat shed (MW4) and immediately north of the main

boatshed (MW5). TRH contaminated groundwater in MW4 is inferred to be located down hydraulic gradient of TRH soil impacts previously identified by Martens in BH213, where surface concentrations of TRH (C_{10}-C_{36}) of 93,100 mg/kg were reported. These results indicate that a source(s) of hydrocarbon contamination may be present within the main boat shed area, which warrants further assessment to identify the contamination source impacting on groundwater.

The source of F3 TRH contamination in MW5 is unknown. We note that TRH concentrations in soil samples analysed from BH314 were reported below LOR; as such it is likely that an up-gradient source is contributing to groundwater contamination. In light of this, further investigation is warranted to identify the source of this TRH in groundwater.

Due to the shallow nature of groundwater (<2.0m BGL) across the majority of the site, the use of HSLs for screening TRH in groundwater to appraise potential soil vapour intrusion cannot be performed due to the absence of appropriate criteria in NEPC (2013). To assess potential human health risks associated with vapour generation from TRH impacted groundwater at shallow depths (<2.0 mBGL), direct soil vapour measurements will be necessary in impacted areas to evaluate the risk to site end users.

11 CONCLUSIONS

The property located at 20 Waterview Street, Putney, was the subject of an Environmental Site Assessment in order to assess the potential for on-site contamination associated with the identified current and former land uses. Based on the findings of this Additional Environmental Site Assessment, the following is concluded:

- Impacted soils were identified at one sampling location (BH307-1) along the southern perimeter of the site with lead, F2 TRH, and asbestos exceeding the adopted health criteria. The remaining analytes were reported below the adopted HIL criteria at all remaining locations.
- Impacted soils were identified at sampling locations (BH306, BH307, BH310 and BH313) for either heavy metals (zinc, copper and/or lead), F2 and F3 TRH, exceeding the adopted ecological criteria. The remaining analytes were reported below the adopted EIL and ESL criteria at all remaining locations.
- TRH concentration were identified at concentrations below adopted HSL criteria at locations BH307, BH311, BH313, and BH314 in proximity to the main boat shed / warehouse of the site, at various depths within the soil and weathered sandstone profile. With the identification of TRH impacts in groundwater, it is possible that TRH sources in soils in this area of the site may be contributing to possible groundwater contamination and act as a possible source for soil vapour generation.
- ASS assessment performed on soils on the southern and eastern perimeter of the site, identified the presence of potential ASS in areas of alluvial or estuarine soils, and within sandstone encountered at greater depths. Acid sulfate soil management planning will be required during proposed redevelopment.
- Significant zinc, copper, and cadmium groundwater contamination was identified at MW2 exceed adopted GILs by up to two orders of magnitude, present a potential risk of harm to the aquatic ecosystems. Other elevated concentrations of heavy metals within the monitoring well field, while in excess of adopted GILs, are generally at low concentrations or are consistent with background water concentrations identified in the site up-gradient or background well, MW1.
- Investigation indicates concentrations of heavy metals, PAHs, organotins occur at reduced concentrations in sub-tidal sediment, compared to high concentrations previous reported by Martens (2012) in inter-tidal zone sediments along the foreshore of the site. It is likely contamination of benthic sediments is largely present near-shore, in proximity to areas of historic site operations.
- F1, F2, and F3 TRH concentrations were identified to exceed adopted GILs for marine ecosystems in areas of the main boat shed (MW4), and immediately north of the main boatshed (MW5). TRH contamination of groundwater is likely the result of point source or sources of hydrocarbon contamination derived from the main boat shed area. Further investigation is warranted to identify contamination source or sources. The source of TRH contamination in MW5 is also unknown. Further investigation should be performed to identify the source of the contamination.
- Due to the shallow nature of TRH impacted groundwater (<2.0m BGL) the use of HSLs for screening TRH in groundwater to appraise potential soil vapour intrusion cannot be performed due to the absence of criteria in NEPC (2013). As such, direct soil vapour measurements will be necessary in impacted areas to evaluate the potential risks to site end users from soil vapours.

12 RECOMMENDATIONS

In view of the findings, and in accordance with NEPM 2013 guidelines, it is considered that the site can be made suitable for the proposed mix residential and commercial development on completion of the following recommendations:

1. Preparation of a remedial action plan (RAP) to guide site remediation and validation procedures, and to manage wastes for offsite disposal. The RAP should be prepared with regard to proposed land use areas of the site (i.e. residential, commercial, recreational, etc.) to ensure cost effective site remediation. The RAP will assist with developing the most appropriate remedial options based on the contamination present on site, to make the site suitable for its future intended uses.

2. Due to the identified of groundwater contamination, particularly heavy metals and TRH impacts, we recommend periodic groundwater monitoring is performed to gather sufficient data to characterise groundwater geochemistry, and to ensure that a sufficient amount of data is available to assist with the development of the most appropriate groundwater remedial strategy.

3. In light of the identification of hydrocarbon contaminated groundwater in the main boatshed / warehouse area, in combination with previous identified TRH contamination in soils, further investigation should be performed to identify the source of hydrocarbon contamination identified in soils and groundwater in this area of the site. Given the presence of shallow (<2 mBGL) groundwater contamination by hydrocarbons, installation of soil vapour wells will be required to assess potential risks to site end users posed by soil vapour intrusion. Further investigations should include installation of supplementary groundwater monitoring wells to characterise the extent of contaminated groundwater.

   We note that further investigations maybe performed at Masterplan or DA stage, prior to the development of an RAP.

4. Preparation of an Acid Sulfate Soils Management Plan by a qualified environmental consultant, to enable appropriate offsite disposal during site redevelopment. The Acid Sulfate Soils Management Plan should be completed at DA or CC stage.

13 STATEMENT OF LIMITATIONS

The findings presented in this report are the result of discrete and specific sampling methodologies used in accordance with best industry practices and standards. Due to the site-specific nature of soil sampling from point locations, it is considered likely that all variations in subsurface conditions across a site cannot be fully defined, no matter how comprehensive the field investigation program.

While normal assessments of data reliability have been made, EI assumes no responsibility or liability for errors in any data obtained from previous assessments conducted on site, regulatory agencies (e.g. Council, EPA, etc.), statements from sources outside of EI, or developments resulting from situations outside the scope of works of this project.

Despite all reasonable care and diligence, the ground conditions encountered and concentrations of contaminants measured may not be representative of conditions between the locations sampled and investigated. In addition, site characteristics may change at any time in response to variations in natural conditions, chemical reactions and other events, e.g. groundwater movement and or spillages of contaminating substances. These changes may occur subsequent to EI's investigations and assessment.

EI's assessment is necessarily based upon the result of the site investigation and the restricted program of surface and subsurface sampling, screening and chemical testing which was set out in the proposal. Neither EI, nor any other reputable consultant, can provide unqualified warranties nor does EI assume any liability for site conditions not observed or accessible during the time of the investigations.

This report was prepared for the above named client and no responsibility is accepted for use of any part of this report in any other context or for any other purpose or by other third parties. This report does not purport to provide legal advice.

REFERENCES

Australian and New Zealand Environment and Conservation Council, 2000: *Guidelines for Fresh and Marine Water Quality, National Water Quality Management Strategy*, October 2000.

DEC (2006) *Soil Investigation Levels for Urban Development Sites in NSW*, in *Guidelines for the NSW Site Auditor Scheme,* 2nd Edn., NSW Dept. of Environment and Conservation, DEC, 2006.

DECCW (2009) *Waste Classification Guidelines*. Department of Environment, Climate Change and Water, New South Wales, DECCW 2009/806, December, 2009.

DMR (1966) *1:250,000 Geological Series Sheet S1 56-2.* Geological Survey of New South Wales, Department of Mineral Resources.

EPA (1994) *Guidelines for Assessing Service Station Sites*. Environment Protection Authority of New South Wales, Contaminated Sites Unit, EPA 94/119, December 1994.

EPA (1995) *Sampling Design Guidelines*. Environment Protection Authority of New South Wales, Contaminated Sites Unit, EPA 95/59, September 1995.

EPA (1997) *Protection of the Environment Operations Act;*

EPA (1979) *Environmental Planning and Assessment Act;*

EPA (1997) Contaminated Land Management Act;

Hazelton, Bannerman and Tillie. (1990) Soil Landscapes of Sydney 1:100,000 sheet, Soil Conservation Service of NSW, Sydney, September 1990.

NEPM (2013) *National Environmental Protection (Assessment of Site Contamination) Measure 1999*. National Environmental Protection Council, December 1999, Ammendment 2013.

ABBREVIATIONS

AHD	Australian Height Datum
AST	Aboveground Storage Tank
ANZECC	Australian and New Zealand Environment Conservation Council
B(a)P	Benzo(a)Pyrene
BGL	Below Ground Level
BH	Borehole
BTEX	Benzene, Toluene, Ethyl benzene, Xylene
COC	Chemical of Concern
DEC	Department of Environment and Conservation, NSW
DECC	Department of Environment and Climate Change, NSW (formerly DEC)
DECCW	Department of Environment, Climate Change and Water, NSW (formerly DECC)
DP	Deposited Plan
DQO	Data Quality Objective
EI	Environmental Investigations
EIL	Ecological Investigation Level
EPA NSW	Environment Protection Authority, New South Wales
ESA	Environmental Site Assessment
HIL	Health Based Investigation Level
NATA	National Association of Testing Authorities, Australia
NEPC	National Environmental Protection Council
NHMRC	National Health and Medical Research Council
OCPs	Organochlorine Pesticides
OEH	Office of Environment and Heritage, NSW (formerly DECCW)
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PID	Photoionisation Detector
PQL	Practical Quantitation Limit
QC	Quality Control
RAP	Remediation Action Plan
RPD	Relative Percentage Difference
SILs	Soil Investigation Levels
SWL	Standing Water Test
TP	Test Pit
TPHs	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VOC	Volatile Organic Compound
UCL	Upper Confidence Limit

FIGURES

Drawn:	D.S	
Approved:	N.F	
Date:	08-08-14	
Approx Scale:	N.T.S	

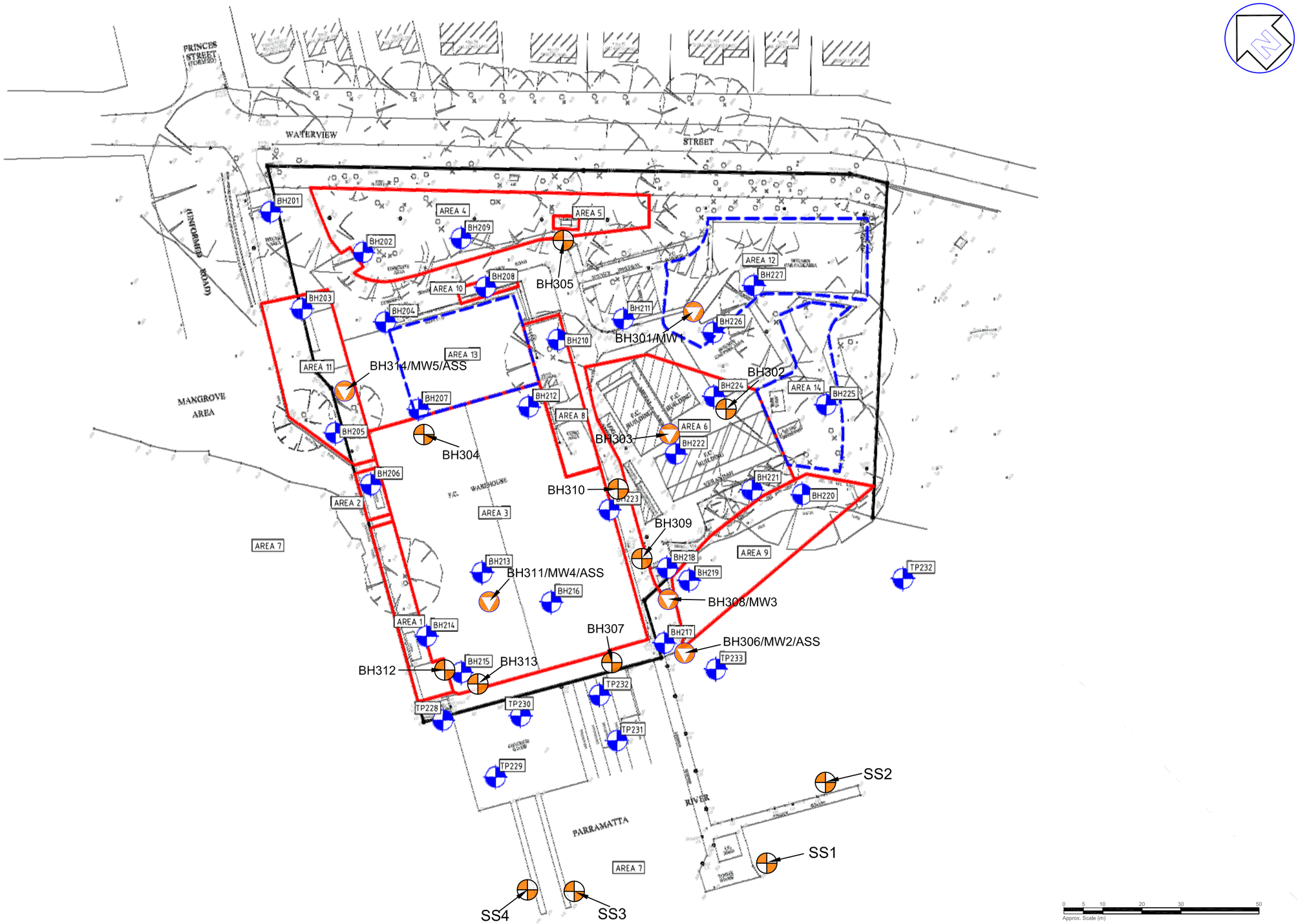
Environmental Investigations Australia
Contamination | Remediation | Geotechnical
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

LILAC PTY LTD

SUPPLEMENTARY ENVIRONMENTAL INVESTIGATION
20 WATERVIEW STREET, PUTNEY NSW
SITE LOCALITY PLAN

Figure: 1

Project: E22215 AA



LEGEND

- Approx. monitoring well/Borehole locations
- Approx. borehole/sedeiment sample locations
- Approx. borehole/test pit locations (MARTENS, 2012)
- A.S.A (2000) Area of Environmental Concern
- Additional identified area of environmental concern (Martens, 2012)

Environmental Investigations Australia
Contamination | Remediation | Geotechnical
Suite 6.01, 55 Miller Street, PYRMONT 2009
Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	C.Y.
Approved:	N.F.
Date:	16-07-14
Approx Scale:	Refer to Scale Bar

Lilac Pty Ltd
Supplementary Environmental Investigation
20 Waterview Street, Putney, NSW
Sampling Location Plan

Figure: 2

Project: E22215 AA

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

APPENDIX A

QUALITY ASSURANCE / QUALITY CONTROL

STATEMENT OF QA/QC PERFORMANCE

SE129041 R0

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 - 20 Waterview St - Putney**
Order Number	**E22215**
Samples	7

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	SE129041 R0
Report Number	0000086170
Date Reported	02 Jul 2014

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

LCS	OC Pesticides in Water	1 item

SAMPLE SUMMARY

Sample counts by matrix	7 Waters	Type of documentation received	COC
Date documentation received	25/6/2014	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE129041 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Ammonia Nitrogen by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN291

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059766	23 Jun 2014	25 Jun 2014	21 Jul 2014	26 Jun 2014	21 Jul 2014	27 Jun 2014
GW2-1	SE129041.002	LB059766	23 Jun 2014	25 Jun 2014	21 Jul 2014	26 Jun 2014	21 Jul 2014	27 Jun 2014
GW3-1	SE129041.003	LB059766	23 Jun 2014	25 Jun 2014	21 Jul 2014	26 Jun 2014	21 Jul 2014	27 Jun 2014
GW5-1	SE129041.004	LB059766	23 Jun 2014	25 Jun 2014	21 Jul 2014	26 Jun 2014	21 Jul 2014	27 Jun 2014

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB060055	23 Jun 2014	25 Jun 2014	21 Jul 2014	02 Jul 2014	21 Jul 2014	02 Jul 2014
GW2-1	SE129041.002	LB060055	23 Jun 2014	25 Jun 2014	21 Jul 2014	02 Jul 2014	21 Jul 2014	02 Jul 2014
GW3-1	SE129041.003	LB060055	23 Jun 2014	25 Jun 2014	21 Jul 2014	02 Jul 2014	21 Jul 2014	02 Jul 2014
GW5-1	SE129041.004	LB060055	23 Jun 2014	25 Jun 2014	21 Jul 2014	02 Jul 2014	21 Jul 2014	02 Jul 2014
GWB100	SE129041.005	LB060055	23 Jun 2014	25 Jun 2014	21 Jul 2014	02 Jul 2014	21 Jul 2014	02 Jul 2014
R100	SE129041.006	LB060055	23 Jun 2014	25 Jun 2014	21 Jul 2014	02 Jul 2014	21 Jul 2014	02 Jul 2014

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW2-1	SE129041.002	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW3-1	SE129041.003	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW5-1	SE129041.004	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GWB100	SE129041.005	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
R100	SE129041.006	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW2-1	SE129041.002	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW3-1	SE129041.003	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW5-1	SE129041.004	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GWB100	SE129041.005	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
R100	SE129041.006	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
GW2-1	SE129041.002	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
GW3-1	SE129041.003	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
GW5-1	SE129041.004	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
GWB100	SE129041.005	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
R100	SE129041.006	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014

PCBs in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW2-1	SE129041.002	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW3-1	SE129041.003	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GW5-1	SE129041.004	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
GWB100	SE129041.005	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014
R100	SE129041.006	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	01 Jul 2014

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN289

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW2-1	SE129041.002	LB059949	23 Jun 2014	25 Jun 2014	21 Jul 2014	01 Jul 2014	21 Jul 2014	01 Jul 2014
GW3-1	SE129041.003	LB059949	23 Jun 2014	25 Jun 2014	21 Jul 2014	01 Jul 2014	21 Jul 2014	01 Jul 2014

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059899	23 Jun 2014	25 Jun 2014	20 Dec 2014	30 Jun 2014	20 Dec 2014	01 Jul 2014
GW2-1	SE129041.002	LB059899	23 Jun 2014	25 Jun 2014	20 Dec 2014	30 Jun 2014	20 Dec 2014	01 Jul 2014
GW3-1	SE129041.003	LB059899	23 Jun 2014	25 Jun 2014	20 Dec 2014	30 Jun 2014	20 Dec 2014	01 Jul 2014
GW5-1	SE129041.004	LB059899	23 Jun 2014	25 Jun 2014	20 Dec 2014	30 Jun 2014	20 Dec 2014	01 Jul 2014
GWB100	SE129041.005	LB059899	23 Jun 2014	25 Jun 2014	20 Dec 2014	30 Jun 2014	20 Dec 2014	01 Jul 2014
R100	SE129041.006	LB059899	23 Jun 2014	25 Jun 2014	20 Dec 2014	30 Jun 2014	20 Dec 2014	01 Jul 2014

HOLDING TIME SUMMARY

SE129041 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
GW2-1	SE129041.002	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
GW3-1	SE129041.003	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
GW5-1	SE129041.004	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
GWB100	SE129041.005	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014
R100	SE129041.006	LB059760	23 Jun 2014	25 Jun 2014	30 Jun 2014	26 Jun 2014	05 Aug 2014	02 Jul 2014

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	01 Jul 2014
GW2-1	SE129041.002	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	01 Jul 2014
GW3-1	SE129041.003	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	01 Jul 2014
GW5-1	SE129041.004	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	01 Jul 2014
GWB100	SE129041.005	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	01 Jul 2014
R100	SE129041.006	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	01 Jul 2014
TB	SE129041.007	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	01 Jul 2014

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
GW1-1	SE129041.001	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	30 Jun 2014
GW2-1	SE129041.002	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	30 Jun 2014
GW3-1	SE129041.003	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	30 Jun 2014
GW5-1	SE129041.004	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	30 Jun 2014
GWB100	SE129041.005	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	30 Jun 2014
R100	SE129041.006	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	30 Jun 2014
TB	SE129041.007	LB059832	23 Jun 2014	25 Jun 2014	30 Jun 2014	27 Jun 2014	06 Aug 2014	30 Jun 2014

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	92

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	74
d14-p-terphenyl (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	108

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	74
	GW2-1	SE129041.002	%	40 - 130%	72
	GW3-1	SE129041.003	%	40 - 130%	70
	GW5-1	SE129041.004	%	40 - 130%	62
	GWB100	SE129041.005	%	40 - 130%	72
d14-p-terphenyl (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	108
	GW2-1	SE129041.002	%	40 - 130%	102
	GW3-1	SE129041.003	%	40 - 130%	92
	GW5-1	SE129041.004	%	40 - 130%	84
	GWB100	SE129041.005	%	40 - 130%	98
d5-nitrobenzene (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	70
	GW2-1	SE129041.002	%	40 - 130%	68
	GW3-1	SE129041.003	%	40 - 130%	68
	GW5-1	SE129041.004	%	40 - 130%	60
	GWB100	SE129041.005	%	40 - 130%	70

PCBs in Water

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	92

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	99
	GW2-1	SE129041.002	%	40 - 130%	102
	GW3-1	SE129041.003	%	40 - 130%	96
	GW5-1	SE129041.004	%	40 - 130%	107
	GWB100	SE129041.005	%	40 - 130%	81
	R100	SE129041.006	%	40 - 130%	79
	TB	SE129041.007	%	40 - 130%	83
d4-1,2-dichloroethane (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	99
	GW2-1	SE129041.002	%	40 - 130%	116
	GW3-1	SE129041.003	%	40 - 130%	109
	GW5-1	SE129041.004	%	40 - 130%	119
	GWB100	SE129041.005	%	40 - 130%	94
	R100	SE129041.006	%	40 - 130%	99
	TB	SE129041.007	%	40 - 130%	108
d8-toluene (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	94
	GW2-1	SE129041.002	%	40 - 130%	94
	GW3-1	SE129041.003	%	40 - 130%	91
	GW5-1	SE129041.004	%	40 - 130%	95
	GWB100	SE129041.005	%	40 - 130%	99
	R100	SE129041.006	%	40 - 130%	97
	TB	SE129041.007	%	40 - 130%	101
Dibromofluoromethane (Surrogate)	GW1-1	SE129041.001	%	40 - 130%	114
	GW2-1	SE129041.002	%	40 - 130%	118
	GW3-1	SE129041.003	%	40 - 130%	120
	GW5-1	SE129041.004	%	40 - 130%	114
	GWB100	SE129041.005	%	40 - 130%	118
	R100	SE129041.006	%	40 - 130%	115
	TB	SE129041.007	%	40 - 130%	109

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Water — **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	GW1-1	SE129041.001	%	60 - 130%	78
	GW2-1	SE129041.002	%	60 - 130%	78
	GW3-1	SE129041.003	%	60 - 130%	78
	GW5-1	SE129041.004	%	60 - 130%	70
	GWB100	SE129041.005	%	60 - 130%	81
	R100	SE129041.006	%	60 - 130%	79
	TB	SE129041.007	%	60 - 130%	83
d4-1,2-dichloroethane (Surrogate)	GW1-1	SE129041.001	%	60 - 130%	110
	GW2-1	SE129041.002	%	60 - 130%	106
	GW3-1	SE129041.003	%	60 - 130%	125
	GW5-1	SE129041.004	%	60 - 130%	113
	GWB100	SE129041.005	%	60 - 130%	94
	R100	SE129041.006	%	60 - 130%	99
	TB	SE129041.007	%	60 - 130%	108
d8-toluene (Surrogate)	GW1-1	SE129041.001	%	60 - 130%	97
	GW2-1	SE129041.002	%	60 - 130%	97
	GW3-1	SE129041.003	%	60 - 130%	97
	GW5-1	SE129041.004	%	60 - 130%	90
	GWB100	SE129041.005	%	60 - 130%	99
	R100	SE129041.006	%	60 - 130%	97
	TB	SE129041.007	%	60 - 130%	101
Dibromofluoromethane (Surrogate)	GW1-1	SE129041.001	%	60 - 130%	111
	GW2-1	SE129041.002	%	60 - 130%	119
	GW3-1	SE129041.003	%	60 - 130%	125
	GW5-1	SE129041.004	%	60 - 130%	113
	GWB100	SE129041.005	%	60 - 130%	118
	R100	SE129041.006	%	60 - 130%	115
	TB	SE129041.007	%	60 - 130%	109

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Ammonia Nitrogen by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN291

Sample Number	Parameter	Units	LOR	Result
LB059766.001	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	<0.01

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Number	Parameter	Units	LOR	Result
LB060055.001	Mercury	mg/L	0.0001	<0.0001

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB059760.001		Alpha BHC	µg/L	0.1	<0.1
		Hexachlorobenzene (HCB)	µg/L	0.1	<0.1
		Beta BHC	µg/L	0.1	<0.1
		Lindane (gamma BHC)	µg/L	0.1	<0.1
		Delta BHC	µg/L	0.1	<0.1
		Heptachlor	µg/L	0.1	<0.1
		Aldrin	µg/L	0.1	<0.1
		Heptachlor epoxide	µg/L	0.1	<0.1
		Gamma Chlordane	µg/L	0.1	<0.1
		Alpha Chlordane	µg/L	0.1	<0.1
		Alpha Endosulfan	µg/L	0.1	<0.1
		p,p'-DDE	µg/L	0.1	<0.1
		Dieldrin	µg/L	0.1	<0.1
		Endrin	µg/L	0.1	<0.1
		Beta Endosulfan	µg/L	0.1	<0.1
		p,p'-DDD	µg/L	0.1	<0.1
		Endosulfan sulphate	µg/L	0.1	<0.1
		p,p'-DDT	µg/L	0.1	<0.1
		Endrin ketone	µg/L	0.1	<0.1
		Methoxychlor	µg/L	0.1	<0.1
		Endrin aldehyde	µg/L	0.1	<0.1
		Isodrin	µg/L	0.1	<0.1
		Mirex	µg/L	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	90

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB059760.001		Dichlorvos	µg/L	0.5	<0.5
		Dimethoate	µg/L	0.5	<0.5
		Diazinon (Dimpylate)	µg/L	0.5	<0.5
		Fenitrothion	µg/L	0.2	<0.2
		Malathion	µg/L	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2
		Parathion-ethyl (Parathion)	µg/L	0.2	<0.2
		Bromophos Ethyl	µg/L	0.2	<0.2
		Methidathion	µg/L	0.5	<0.5
		Ethion	µg/L	0.2	<0.2
		Azinphos-methyl	µg/L	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	106
		d14-p-terphenyl (Surrogate)	%	-	100

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB059760.001	Naphthalene	µg/L	0.1	<0.1
	2-methylnaphthalene	µg/L	0.1	<0.1
	1-methylnaphthalene	µg/L	0.1	<0.1
	Acenaphthylene	µg/L	0.1	<0.1
	Acenaphthene	µg/L	0.1	<0.1
	Fluorene	µg/L	0.1	<0.1
	Phenanthrene	µg/L	0.1	<0.1
	Anthracene	µg/L	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB059760.001		Fluoranthene	µg/L	0.1	<0.1
		Pyrene	µg/L	0.1	<0.1
		Benzo(a)anthracene	µg/L	0.1	<0.1
		Chrysene	µg/L	0.1	<0.1
		Benzo(a)pyrene	µg/L	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
		Dibenzo(a&h)anthracene	µg/L	0.1	<0.1
		Benzo(ghi)perylene	µg/L	0.1	<0.1
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	106
		2-fluorobiphenyl (Surrogate)	%	-	106
		d14-p-terphenyl (Surrogate)	%	-	100

PCBs in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number	Parameter	Units	LOR	Result
LB059760.001	Arochlor 1016	µg/L	1	<1
	Arochlor 1221	µg/L	1	<1
	Arochlor 1232	µg/L	1	<1
	Arochlor 1242	µg/L	1	<1
	Arochlor 1248	µg/L	1	<1
	Arochlor 1254	µg/L	1	<1
	Arochlor 1260	µg/L	1	<1
	Arochlor 1262	µg/L	1	<1
	Arochlor 1268	µg/L	1	<1

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN289

Sample Number	Parameter	Units	LOR	Result
LB059949.001	Total Phenols	mg/L	0.01	<0.01

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB059899.001	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB059760.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB059832.001	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5
		1,2-dichloropropane	µg/L	0.5	<0.5
		cis-1,3-dichloropropene	µg/L	0.5	<0.5
		trans-1,3-dichloropropene	µg/L	0.5	<0.5
		1,2-dibromoethane (EDB)	µg/L	0.5	<0.5
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
		Chloromethane	µg/L	5	<5
		Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3
		Bromomethane	µg/L	10	<10
		Chloroethane	µg/L	5	<5
		Trichlorofluoromethane	µg/L	1	<1
		Iodomethane	µg/L	5	<5
		1,1-dichloroethene	µg/L	0.5	<0.5
		Dichloromethane (Methylene chloride)	µg/L	5	<5

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB059832.001	Halogenated Aliphatics	Allyl chloride	µg/L	2	<2
		trans-1,2-dichloroethene	µg/L	0.5	<0.5
		1,1-dichloroethane	µg/L	0.5	<0.5
		cis-1,2-dichloroethene	µg/L	0.5	<0.5
		Bromochloromethane	µg/L	0.5	<0.5
		1,2-dichloroethane	µg/L	0.5	<0.5
		1,1,1-trichloroethane	µg/L	0.5	<0.5
		1,1-dichloropropene	µg/L	0.5	<0.5
		Carbon tetrachloride	µg/L	0.5	<0.5
		Dibromomethane	µg/L	0.5	<0.5
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
		1,1,2-trichloroethane	µg/L	0.5	<0.5
		1,3-dichloropropane	µg/L	0.5	<0.5
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5
		cis-1,4-dichloro-2-butene	µg/L	1	<1
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
		1,2,3-trichloropropane	µg/L	0.5	<0.5
		trans-1,4-dichloro-2-butene	µg/L	1	<1
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
		Hexachlorobutadiene	µg/L	0.5	<0.5
	Halogenated Aromatics	Chlorobenzene	µg/L	0.5	<0.5
		Bromobenzene	µg/L	0.5	<0.5
		2-chlorotoluene	µg/L	0.5	<0.5
		4-chlorotoluene	µg/L	0.5	<0.5
		1,3-dichlorobenzene	µg/L	0.5	<0.5
		1,4-dichlorobenzene	µg/L	0.3	<0.3
		1,2-dichlorobenzene	µg/L	0.5	<0.5
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5
		1,2,3-trichlorobenzene	µg/L	0.5	<0.5
	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
		Styrene (Vinyl benzene)	µg/L	0.5	<0.5
		Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
		n-propylbenzene	µg/L	0.5	<0.5
		1,3,5-trimethylbenzene	µg/L	0.5	<0.5
		tert-butylbenzene	µg/L	0.5	<0.5
		1,2,4-trimethylbenzene	µg/L	0.5	<0.5
		sec-butylbenzene	µg/L	0.5	<0.5
		p-isopropyltoluene	µg/L	0.5	<0.5
		n-butylbenzene	µg/L	0.5	<0.5
	Nitrogenous Compounds	Acrylonitrile	µg/L	0.5	<0.5
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10
		MtBE (Methyl-tert-butyl ether)	µg/L	2	<1
		Vinyl acetate	µg/L	10	<10
		MEK (2-butanone)	µg/L	10	<10
		MIBK (4-methyl-2-pentanone)	µg/L	5	<5
		2-hexanone (MBK)	µg/L	5	<5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	105
		d4-1,2-dichloroethane (Surrogate)	%	-	110
		d8-toluene (Surrogate)	%	-	100
		Bromofluorobenzene (Surrogate)	%	-	96
	Trihalomethanes	Chloroform (THM)	µg/L	0.5	<0.5
		Bromodichloromethane (THM)	µg/L	0.5	<0.5
		Dibromochloromethane (THM)	µg/L	0.5	<0.5
		Bromoform (THM)	µg/L	0.5	<0.5

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Volatile Petroleum Hydrocarbons in Water — **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Sample Number		Parameter	Units	LOR	Result
LB059832.001		TRH C6-C9	µg/L	40	<40
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	119
		d4-1,2-dichloroethane (Surrogate)	%	-	103
		d8-toluene (Surrogate)	%	-	97
		Bromofluorobenzene (Surrogate)	%	-	81

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Ammonia Nitrogen by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN291

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129041.001	LB059766.004	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	0.12	0.12	23	1

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129212.010	LB060055.011	Mercury	µg/L	0.0001	<0.0001	0	200	0

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129035.003	LB059760.006		Naphthalene	µg/L	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	200	0
			Acenaphthylene	µg/L	0.1	<0.1	<0.1	200	0
			Acenaphthene	µg/L	0.1	<0.1	<0.1	200	0
			Fluorene	µg/L	0.1	<0.1	<0.1	200	0
			Phenanthrene	µg/L	0.1	<0.1	<0.1	200	0
			Anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Chrysene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	µg/L	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.3	0.3	30	0
			2-fluorobiphenyl (Surrogate)	µg/L	-	0.3	0.3	30	3
			d14-p-terphenyl (Surrogate)	µg/L	-	0.4	0.5	30	11

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129041.002	LB059899.014	Arsenic, As	µg/L	1	<1	<1	194	0
		Cadmium, Cd	µg/L	0.1	6.7	7.0	16	3
		Chromium, Cr	µg/L	1	<1	<1	200	0
		Copper, Cu	µg/L	1	310	320	15	0
		Lead, Pb	µg/L	1	<1	<1	200	0
		Nickel, Ni	µg/L	1	88	89	16	1
		Zinc, Zn	µg/L	5	2500	2500	15	1
SE129079.004	LB059899.024	Arsenic, As	µg/L	1	1.039	1.139	107	9
		Cadmium, Cd	µg/L	0.1	0.066	0.052	184	0
		Chromium, Cr	µg/L	1	-0.259	-0.237	200	0
		Copper, Cu	µg/L	1	1.452	1.464	84	1
		Lead, Pb	µg/L	1	0.011	0.006	200	0
		Nickel, Ni	µg/L	1	12.194	12.273	23	1
		Zinc, Zn	µg/L	5	27.966	28.26	33	1

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129035.003	LB059760.006		TRH C10-C14	µg/L	50	<50	<50	200	0
			TRH C15-C28	µg/L	200	<200	<200	200	0
			TRH C29-C36	µg/L	200	<200	<200	200	0
			TRH C37-C40	µg/L	200	<200	<200	200	0
			TRH C10-C36	µg/L	450	<450	<450	200	0
			TRH C10-C40	µg/L	650	<650	<650	200	0
		TRH F Bands	TRH >C10-C16 (F2)	µg/L	60	<60	<60	200	0
			TRH >C16-C34 (F3)	µg/L	500	<500	<500	200	0
			TRH >C34-C40 (F4)	µg/L	500	<500	<500	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Ammonia Nitrogen by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN291

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059766.002	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	2.6	2.5	80 - 120	102

OC Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059760.002		Delta BHC	µg/L	0.1	0.3	0.2	60 - 140	134
		Heptachlor	µg/L	0.1	0.3	0.2	60 - 140	139
		Aldrin	µg/L	0.1	0.3	0.2	60 - 140	138
		Dieldrin	µg/L	0.1	0.3	0.2	60 - 140	135
		Endrin	µg/L	0.1	0.3	0.2	60 - 140	140
		p,p'-DDT	µg/L	0.1	0.3	0.2	60 - 140	130
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	µg/L	-	0	0.15	40 - 130	110†

OP Pesticides in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059760.002		Dichlorvos	µg/L	0.5	7.0	8	60 - 140	88
		Diazinon (Dimpylate)	µg/L	0.5	6.7	8	60 - 140	84
		Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	6.7	8	60 - 140	84
		Ethion	µg/L	0.2	6.7	8	60 - 140	84
	Surrogates	2-fluorobiphenyl (Surrogate)	µg/L	-	0.5	0.5	40 - 130	98
		d14-p-terphenyl (Surrogate)	µg/L	-	0.5	0.5	40 - 130	96

PAH (Polynuclear Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059760.002		Naphthalene	µg/L	0.1	38	40	60 - 140	95
		Acenaphthylene	µg/L	0.1	38	40	60 - 140	95
		Acenaphthene	µg/L	0.1	38	40	60 - 140	95
		Phenanthrene	µg/L	0.1	37	40	60 - 140	93
		Anthracene	µg/L	0.1	39	40	60 - 140	98
		Fluoranthene	µg/L	0.1	33	40	60 - 140	83
		Pyrene	µg/L	0.1	40	40	60 - 140	100
		Benzo(a)pyrene	µg/L	0.1	43	40	60 - 140	108
	Surrogates	d5-nitrobenzene (Surrogate)	µg/L	-	0.5	0.5	40 - 130	96
		2-fluorobiphenyl (Surrogate)	µg/L	-	0.5	0.5	40 - 130	98
		d14-p-terphenyl (Surrogate)	µg/L	-	0.5	0.5	40 - 130	96

PCBs in Water

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059760.002	Arochlor 1260	µg/L	1	<1	0.4	60 - 140	107

Total Phenolics in Water

Method: ME-(AU)-[ENV]AN289

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059949.002	Total Phenols	mg/L	0.01	0.23	0.25	80 - 120	94

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059899.002	Arsenic, As	µg/L	1	19	20	80 - 120	97
	Cadmium, Cd	µg/L	0.1	19	20	80 - 120	96
	Chromium, Cr	µg/L	1	19	20	80 - 120	94
	Copper, Cu	µg/L	1	20	20	80 - 120	100
	Lead, Pb	µg/L	1	20	20	80 - 120	100
	Nickel, Ni	µg/L	1	21	20	80 - 120	103
	Zinc, Zn	µg/L	5	21	20	80 - 120	104

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059760.002	TRH C10-C14	µg/L	50	950	1200	60 - 140	79
	TRH C15-C28	µg/L	200	1100	1200	60 - 140	88
	TRH C29-C36	µg/L	200	1100	1200	60 - 140	92

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

TRH (Total Recoverable Hydrocarbons) in Water (continued)

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059760.002	TRH F Bands	TRH >C10-C16 (F2)	µg/L	60	990	1200	60 - 140	82
		TRH >C16-C34 (F3)	µg/L	500	1100	1200	60 - 140	94
		TRH >C34-C40 (F4)	µg/L	500	570	600	60 - 140	94

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059832.002	Halogenated	1,1-dichloroethene	µg/L	0.5	50	45.45	60 - 140	110
	Aliphatics	1,2-dichloroethane	µg/L	0.5	50	45.45	60 - 140	110
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	47	45.45	60 - 140	103
	Halogenated	Chlorobenzene	µg/L	0.5	46	45.45	60 - 140	101
	Monocyclic	Benzene	µg/L	0.5	51	45.45	60 - 140	113
	Aromatic	Toluene	µg/L	0.5	47	45.45	60 - 140	103
		Ethylbenzene	µg/L	0.5	46	45.45	60 - 140	102
		m/p-xylene	µg/L	1	56	90.9	60 - 140	61
		o-xylene	µg/L	0.5	44	45.45	60 - 140	98
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	4.9	5	60 - 140	98
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.8	5	60 - 140	96
		d8-toluene (Surrogate)	µg/L	-	4.6	5	60 - 140	93
		Bromofluorobenzene (Surrogate)	µg/L	-	4.9	5	60 - 140	98
	Trihalomethan	Chloroform (THM)	µg/L	0.5	29	45.45	60 - 140	64

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059832.002		TRH C6-C10	µg/L	50	1100	946.63	60 - 140	115
		TRH C6-C9	µg/L	40	880	818.71	60 - 140	108
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	4.6	5	60 - 140	92
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.7	5	60 - 140	94
		d8-toluene (Surrogate)	µg/L	-	5.0	5	60 - 140	99
		Bromofluorobenzene (Surrogate)	µg/L	-	5.5	5	60 - 140	110
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	800	639.67	60 - 140	126

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub -sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Ammonia Nitrogen by Discrete Analyser (Aquakem)

Method: ME-(AU)-[ENV]AN291

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE129048.001	LB059766.009	Ammonia Nitrogen, NH_3 as N	mg/L	0.01	2.8	0.23	2.5	101

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE129041.001	LB060055.004	Mercury	mg/L	0.0001	0.0070	<0.0001	0.008	88

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE129035.001	LB059899.004	Arsenic, As	µg/L	1	21	1	20	99
		Cadmium, Cd	µg/L	0.1	20	<0.1	20	98
		Chromium, Cr	µg/L	1	19	<1	20	94
		Copper, Cu	µg/L	1	20	1	20	96
		Lead, Pb	µg/L	1	20	<1	20	98
		Nickel, Ni	µg/L	1	26	5	20	101
		Zinc, Zn	µg/L	5	26	<5	20	107

MATRIX SPIKE DUPLICATES

SE129041 R0

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	Non-accredited analysis.
-	Sample not analysed for this analyte.
^	Analysis performed by external laboratory.

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

STATEMENT OF QA/QC PERFORMANCE

SE129036 R0

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 - 20 Waterview St, Putney NSW**
Order Number	**E22215**
Samples	4

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	SE129036 R0
Report Number	0000086314
Date Reported	04 Jul 2014

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Alexandria Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	4 Soils	Type of documentation received	COC
Date documentation received	25/6/2014	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE129036 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE129036.001	LB059956	23 Jun 2014	25 Jun 2014	21 Jul 2014	01 Jul 2014	21 Jul 2014	02 Jul 2014
SS2	SE129036.002	LB059956	23 Jun 2014	25 Jun 2014	21 Jul 2014	01 Jul 2014	21 Jul 2014	02 Jul 2014
SS3	SE129036.003	LB059956	23 Jun 2014	25 Jun 2014	21 Jul 2014	01 Jul 2014	21 Jul 2014	02 Jul 2014
SS4	SE129036.004	LB059956	23 Jun 2014	25 Jun 2014	21 Jul 2014	01 Jul 2014	21 Jul 2014	02 Jul 2014

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE129036.001	LB059957	23 Jun 2014	25 Jun 2014	07 Jul 2014	01 Jul 2014	06 Jul 2014	02 Jul 2014
SS2	SE129036.002	LB059957	23 Jun 2014	25 Jun 2014	07 Jul 2014	01 Jul 2014	06 Jul 2014	02 Jul 2014
SS3	SE129036.003	LB059957	23 Jun 2014	25 Jun 2014	07 Jul 2014	01 Jul 2014	06 Jul 2014	02 Jul 2014
SS4	SE129036.004	LB059957	23 Jun 2014	25 Jun 2014	07 Jul 2014	01 Jul 2014	06 Jul 2014	02 Jul 2014

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE129036.001	LB059835	23 Jun 2014	25 Jun 2014	07 Jul 2014	27 Jun 2014	06 Aug 2014	04 Jul 2014
SS2	SE129036.002	LB059835	23 Jun 2014	25 Jun 2014	07 Jul 2014	27 Jun 2014	06 Aug 2014	04 Jul 2014
SS3	SE129036.003	LB059835	23 Jun 2014	25 Jun 2014	07 Jul 2014	27 Jun 2014	06 Aug 2014	04 Jul 2014
SS4	SE129036.004	LB059835	23 Jun 2014	25 Jun 2014	07 Jul 2014	27 Jun 2014	06 Aug 2014	04 Jul 2014

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SS1	SE129036.001	LB059951	23 Jun 2014	25 Jun 2014	20 Dec 2014	01 Jul 2014	20 Dec 2014	02 Jul 2014
SS2	SE129036.002	LB059951	23 Jun 2014	25 Jun 2014	20 Dec 2014	01 Jul 2014	20 Dec 2014	02 Jul 2014
SS3	SE129036.003	LB059951	23 Jun 2014	25 Jun 2014	20 Dec 2014	01 Jul 2014	20 Dec 2014	02 Jul 2014
SS4	SE129036.004	LB059951	23 Jun 2014	25 Jun 2014	20 Dec 2014	01 Jul 2014	20 Dec 2014	02 Jul 2014

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — **Method: ME-(AU)-[ENV]AN420**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	SS1	SE129036.001	%	60 - 130%	92
	SS2	SE129036.002	%	60 - 130%	90
	SS3	SE129036.003	%	60 - 130%	90
	SS4	SE129036.004	%	60 - 130%	94
d14-p-terphenyl (Surrogate)	SS1	SE129036.001	%	60 - 130%	98
	SS2	SE129036.002	%	60 - 130%	98
	SS3	SE129036.003	%	60 - 130%	98
	SS4	SE129036.004	%	60 - 130%	106
d5-nitrobenzene (Surrogate)	SS1	SE129036.001	%	60 - 130%	96
	SS2	SE129036.002	%	60 - 130%	96
	SS3	SE129036.003	%	60 - 130%	94
	SS4	SE129036.004	%	60 - 130%	98

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB059956.001	Mercury	mg/kg	0.05	<0.05

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB059835.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	88
		2-fluorobiphenyl (Surrogate)	%	-	84
		d14-p-terphenyl (Surrogate)	%	-	86

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB059951.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	2	<2

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129030.002	LB059956.014	Mercury	mg/kg	0.05	0.03	0.03	183	0
SE129038.005	LB059956.024	Mercury	mg/kg	0.05	0.26	0.17	53	44

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129015.007	LB059957.011	% Moisture	%w/w	0.5	18	22	35	19
SE129038.003	LB059957.022	% Moisture	%	0.5	15	14	37	7
SE129088.001	LB059957.027	% Moisture	%	0.5	27	25	34	8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129081.010	LB059835.016		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	10
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129030.002	LB059951.014	Arsenic, As	mg/kg	1	3	<3	66	28
		Cadmium, Cd	mg/kg	0.3	0.5	0.5	87	1
		Chromium, Cr	mg/kg	0.5	89	75	31	17
		Copper, Cu	mg/kg	0.5	77	70	31	9
		Lead, Pb	mg/kg	1	13	14	38	4
		Nickel, Ni	mg/kg	0.5	99	80	31	21
		Zinc, Zn	mg/kg	2	94	100	32	7
SE129038.005	LB059951.024	Arsenic, As	mg/kg	1	10	13	39	25
		Cadmium, Cd	mg/kg	0.3	0.9	0.8	65	14
		Chromium, Cr	mg/kg	0.5	15	16	33	5
		Copper, Cu	mg/kg	0.5	120	90	30	25
		Lead, Pb	mg/kg	1	380	350	30	8
		Nickel, Ni	mg/kg	0.5	8.1	11	35	28
		Zinc, Zn	mg/kg	2	520	450	30	16

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059956.002	Mercury	mg/kg	0.05	0.21	0.2	70 - 130	106

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059835.002		Naphthalene	mg/kg	0.1	3.6	4	60 - 140	91
		Acenaphthylene	mg/kg	0.1	3.9	4	60 - 140	99
		Acenaphthene	mg/kg	0.1	4.1	4	60 - 140	102
		Phenanthrene	mg/kg	0.1	3.8	4	60 - 140	94
		Anthracene	mg/kg	0.1	3.5	4	60 - 140	89
		Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	92
		Pyrene	mg/kg	0.1	3.3	4	60 - 140	82
		Benzo(a)pyrene	mg/kg	0.1	3.9	4	60 - 140	98
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	94

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059951.002	Arsenic, As	mg/kg	1	50	50	80 - 120	101
	Cadmium, Cd	mg/kg	0.3	51	50	80 - 120	102
	Chromium, Cr	mg/kg	0.5	50	50	80 - 120	101
	Copper, Cu	mg/kg	0.5	51	50	80 - 120	102
	Lead, Pb	mg/kg	1	51	50	80 - 120	101
	Nickel, Ni	mg/kg	0.5	51	50	80 - 120	102
	Zinc, Zn	mg/kg	2	50	50	80 - 120	101

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub -sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE129006.001	LB059956.004	Mercury	mg/kg	0.05	0.22	0.04	0.2	88

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE129081.001	LB059835.009		Naphthalene	mg/kg	0.1	3.5	<0.1	4	88
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	3.7	<0.1	4	93
			Acenaphthene	mg/kg	0.1	4.0	<0.1	4	101
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	3.9	<0.1	4	97
			Anthracene	mg/kg	0.1	3.6	<0.1	4	89
			Fluoranthene	mg/kg	0.1	3.7	<0.1	4	92
			Pyrene	mg/kg	0.1	3.0	<0.1	4	76
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	3.8	<0.1	4	94
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ	0.2	3.8	<0.2	-	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3	3.9	<0.3	-	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	3.8	<0.2	-	-
			Total PAH	mg/kg	0.8	29	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	84
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	78
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	94

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE129006.001	LB059951.004	Arsenic, As	mg/kg	1	52	7	50	90
		Cadmium, Cd	mg/kg	0.3	45	<0.3	50	89
		Chromium, Cr	mg/kg	0.5	59	14	50	89
		Copper, Cu	mg/kg	0.5	75	30	50	90
		Lead, Pb	mg/kg	1	59	17	50	83
		Nickel, Ni	mg/kg	0.5	59	16	50	86
		Zinc, Zn	mg/kg	2	100	62	50	78

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil — **Method: ME-(AU)-[ENV]AN420**

QC Sample	Sample Number		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE129081.001	LB059835.010		Naphthalene	mg/kg	0.1	3.5	3.9	33	12
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	-
			Acenaphthylene	mg/kg	0.1	3.7	4.2	33	11
			Acenaphthene	mg/kg	0.1	4.0	4.6	32	12
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	-
			Phenanthrene	mg/kg	0.1	3.9	3.9	33	1
			Anthracene	mg/kg	0.1	3.6	3.6	33	0
			Fluoranthene	mg/kg	0.1	3.7	3.7	33	2
			Pyrene	mg/kg	0.1	3.0	3.1	33	1
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	-
			Benzo(a)pyrene	mg/kg	0.1	3.8	4.1	33	8
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	-
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ	0.2	3.8	4.1	15	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3	3.9	4.2	17	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	3.8	4.1	15	-
			Total PAH	mg/kg	0.8	29	31	33	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	5
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	7
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	Non-accredited analysis.
-	Sample not analysed for this analyte.
^	Analysis performed by external laboratory.

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

STATEMENT OF QA/QC PERFORMANCE

SE128733 R0

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 – 20 Waterview Street, Putney NSW**
Order Number	**E22215**
Samples	35

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	SE128733 R0
Report Number	0000085550
Date Reported	24 Jun 2014

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	pH in soil (1:5)	1 item
	TRH (Total Recoverable Hydrocarbons) in Water	1 item
	VOCs in Water	1 item
	Volatile Petroleum Hydrocarbons in Water	1 item
Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	5 items
	Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest	1 item
LCS	OC Pesticides in Soil	1 item
	OC Pesticides in Soil	1 item
Matrix Spike	Total Phenolics in Soil	1 item
	Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest	1 item

SAMPLE SUMMARY

Sample counts by matrix	33 Soils, 2 Waters	Type of documentation received	COC
Date documentation received	13/06/2014@04:57p	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.6°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

HOLDING TIME SUMMARY

SE128733 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EIL-1	SE128733.035	LB059397	10 Jun 2014	11 Jun 2014	08 Jul 2014	19 Jun 2014	08 Jul 2014	23 Jun 2014

Fibre Identification in soil

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH302-1	SE128733.004	LB059470	06 Jun 2014	11 Jun 2014	06 Jun 2015	20 Jun 2014	06 Jun 2015	23 Jun 2014
BH304-1	SE128733.008	LB059470	10 Jun 2014	11 Jun 2014	10 Jun 2015	20 Jun 2014	10 Jun 2015	23 Jun 2014
BH305-1	SE128733.010	LB059470	06 Jun 2014	11 Jun 2014	06 Jun 2015	20 Jun 2014	06 Jun 2015	23 Jun 2014
BH306-1	SE128733.012	LB059470	06 Jun 2014	11 Jun 2014	06 Jun 2015	20 Jun 2014	06 Jun 2015	23 Jun 2014
BH307-1	SE128733.015	LB059470	06 Jun 2014	11 Jun 2014	06 Jun 2015	20 Jun 2014	06 Jun 2015	23 Jun 2014
BH308-1	SE128733.018	LB059470	06 Jun 2014	11 Jun 2014	06 Jun 2015	20 Jun 2014	06 Jun 2015	23 Jun 2014
BH311-1	SE128733.023	LB059470	10 Jun 2014	11 Jun 2014	10 Jun 2015	20 Jun 2014	10 Jun 2015	23 Jun 2014
BH312-1	SE128733.025	LB059470	10 Jun 2014	11 Jun 2014	10 Jun 2015	20 Jun 2014	10 Jun 2015	23 Jun 2014
BH313-1	SE128733.026	LB059470	10 Jun 2014	11 Jun 2014	10 Jun 2015	20 Jun 2014	10 Jun 2015	23 Jun 2014
BH314-1	SE128733.028	LB059470	10 Jun 2014	11 Jun 2014	10 Jun 2015	20 Jun 2014	10 Jun 2015	23 Jun 2014

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
R300	SE128733.032	LB059437	06 Jun 2014	11 Jun 2014	04 Jul 2014	20 Jun 2014	04 Jul 2014	23 Jun 2014
R301	SE128733.033	LB059437	10 Jun 2014	11 Jun 2014	08 Jul 2014	20 Jun 2014	08 Jul 2014	23 Jun 2014

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH302-1	SE128733.004	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH302-2	SE128733.005	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH303-1	SE128733.006	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH303-2	SE128733.007	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH304-1	SE128733.008	LB059294	10 Jun 2014	11 Jun 2014	08 Jul 2014	18 Jun 2014	08 Jul 2014	23 Jun 2014
BH305-1	SE128733.010	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH305-3	SE128733.011	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH306-1	SE128733.012	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH307-1	SE128733.015	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	24 Jun 2014
BH307-3	SE128733.017	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH308-1	SE128733.018	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH309-1	SE128733.020	LB059294	06 Jun 2014	11 Jun 2014	04 Jul 2014	18 Jun 2014	04 Jul 2014	23 Jun 2014
BH310-1	SE128733.022	LB059294	10 Jun 2014	11 Jun 2014	08 Jul 2014	18 Jun 2014	08 Jul 2014	23 Jun 2014
BH311-1	SE128733.023	LB059294	10 Jun 2014	11 Jun 2014	08 Jul 2014	18 Jun 2014	08 Jul 2014	23 Jun 2014
BH311-2	SE128733.024	LB059294	10 Jun 2014	11 Jun 2014	08 Jul 2014	18 Jun 2014	08 Jul 2014	23 Jun 2014
BH312-1	SE128733.025	LB059294	10 Jun 2014	11 Jun 2014	08 Jul 2014	18 Jun 2014	08 Jul 2014	23 Jun 2014
BH313-1	SE128733.026	LB059294	10 Jun 2014	11 Jun 2014	08 Jul 2014	18 Jun 2014	08 Jul 2014	23 Jun 2014
BH314-1	SE128733.028	LB059294	10 Jun 2014	11 Jun 2014	08 Jul 2014	18 Jun 2014	08 Jul 2014	23 Jun 2014
BH314-3	SE128733.029	LB059344	10 Jun 2014	11 Jun 2014	08 Jul 2014	19 Jun 2014	08 Jul 2014	23 Jun 2014
B300	SE128733.034	LB059344	10 Jun 2014	11 Jun 2014	08 Jul 2014	19 Jun 2014	08 Jul 2014	23 Jun 2014
EIL-1	SE128733.035	LB059344	10 Jun 2014	11 Jun 2014	08 Jul 2014	19 Jun 2014	08 Jul 2014	23 Jun 2014

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH301-2	SE128733.002	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH301-5	SE128733.003	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH302-1	SE128733.004	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH302-2	SE128733.005	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH303-1	SE128733.006	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH303-2	SE128733.007	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH304-1	SE128733.008	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH304-2	SE128733.009	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH305-1	SE128733.010	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH305-3	SE128733.011	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH306-1	SE128733.012	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH306-4	SE128733.013	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH306-6	SE128733.014	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014

HOLDING TIME SUMMARY

SE128733 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

Moisture Content (continued)

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH307-1	SE128733.015	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH307-2	SE128733.016	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH307-3	SE128733.017	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH308-1	SE128733.018	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH308-3	SE128733.019	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH309-1	SE128733.020	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH309-3	SE128733.021	LB059328	06 Jun 2014	11 Jun 2014	20 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH310-1	SE128733.022	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH311-1	SE128733.023	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH311-2	SE128733.024	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH312-1	SE128733.025	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH313-1	SE128733.026	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH313-3	SE128733.027	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH314-1	SE128733.028	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
BH314-3	SE128733.029	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
Trip Blank	SE128733.030	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
B300	SE128733.034	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014
EIL-1	SE128733.035	LB059328	10 Jun 2014	11 Jun 2014	24 Jun 2014	18 Jun 2014	23 Jun 2014	19 Jun 2014

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-5	SE128733.003	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH302-1	SE128733.004	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH303-1	SE128733.006	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-1	SE128733.008	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-2	SE128733.009	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH305-1	SE128733.010	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-1	SE128733.012	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-4	SE128733.013	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-6	SE128733.014	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-1	SE128733.015	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-2	SE128733.016	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-3	SE128733.017	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-1	SE128733.018	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-3	SE128733.019	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-1	SE128733.020	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-3	SE128733.021	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH310-1	SE128733.022	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-1	SE128733.023	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-2	SE128733.024	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH312-1	SE128733.025	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-1	SE128733.026	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-3	SE128733.027	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-1	SE128733.028	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-3	SE128733.029	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
B300	SE128733.034	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-5	SE128733.003	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH302-1	SE128733.004	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH303-1	SE128733.006	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-1	SE128733.008	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-2	SE128733.009	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH305-1	SE128733.010	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-1	SE128733.012	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-4	SE128733.013	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-6	SE128733.014	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-1	SE128733.015	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

HOLDING TIME SUMMARY

SE128733 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH307-2	SE128733.016	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-3	SE128733.017	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-1	SE128733.018	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-3	SE128733.019	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-1	SE128733.020	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-3	SE128733.021	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH310-1	SE128733.022	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-1	SE128733.023	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-2	SE128733.024	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH312-1	SE128733.025	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-1	SE128733.026	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-3	SE128733.027	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-1	SE128733.028	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-3	SE128733.029	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
B300	SE128733.034	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-5	SE128733.003	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH302-1	SE128733.004	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH303-1	SE128733.006	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-1	SE128733.008	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-2	SE128733.009	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH305-1	SE128733.010	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-1	SE128733.012	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-4	SE128733.013	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-6	SE128733.014	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-1	SE128733.015	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-2	SE128733.016	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-3	SE128733.017	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-1	SE128733.018	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-3	SE128733.019	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-1	SE128733.020	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-3	SE128733.021	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH310-1	SE128733.022	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-1	SE128733.023	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-2	SE128733.024	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH312-1	SE128733.025	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-1	SE128733.026	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-3	SE128733.027	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-1	SE128733.028	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-3	SE128733.029	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
B300	SE128733.034	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-5	SE128733.003	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH302-1	SE128733.004	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH303-1	SE128733.006	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-1	SE128733.008	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-2	SE128733.009	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH305-1	SE128733.010	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-1	SE128733.012	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-4	SE128733.013	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-6	SE128733.014	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-1	SE128733.015	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-2	SE128733.016	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-3	SE128733.017	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-1	SE128733.018	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH308-3	SE128733.019	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-1	SE128733.020	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-3	SE128733.021	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH310-1	SE128733.022	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-1	SE128733.023	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-2	SE128733.024	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH312-1	SE128733.025	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-1	SE128733.026	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-3	SE128733.027	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-1	SE128733.028	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-3	SE128733.029	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
B300	SE128733.034	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
EIL-1	SE128733.035	LB059303	10 Jun 2014	11 Jun 2014	17 Jun 2014	18 Jun 2014†	19 Jun 2014	19 Jun 2014

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN289

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH306-4	SE128733.013	LB059346	06 Jun 2014	11 Jun 2014	20 Jun 2014	19 Jun 2014	20 Jun 2014	19 Jun 2014
BH308-1	SE128733.018	LB059346	06 Jun 2014	11 Jun 2014	20 Jun 2014	19 Jun 2014	20 Jun 2014	19 Jun 2014
BH308-3	SE128733.019	LB059346	06 Jun 2014	11 Jun 2014	20 Jun 2014	19 Jun 2014	20 Jun 2014	19 Jun 2014
BH309-1	SE128733.020	LB059346	06 Jun 2014	11 Jun 2014	20 Jun 2014	19 Jun 2014	20 Jun 2014	19 Jun 2014
BH314-1	SE128733.028	LB059346	10 Jun 2014	11 Jun 2014	24 Jun 2014	19 Jun 2014	24 Jun 2014	19 Jun 2014

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH302-1	SE128733.004	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH302-2	SE128733.005	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH303-1	SE128733.006	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH303-2	SE128733.007	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH304-1	SE128733.008	LB059293	10 Jun 2014	11 Jun 2014	07 Dec 2014	18 Jun 2014	07 Dec 2014	19 Jun 2014
BH305-1	SE128733.010	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH305-3	SE128733.011	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH306-1	SE128733.012	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	20 Jun 2014
BH307-1	SE128733.015	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	20 Jun 2014
BH307-3	SE128733.017	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH308-1	SE128733.018	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH309-1	SE128733.020	LB059293	06 Jun 2014	11 Jun 2014	03 Dec 2014	18 Jun 2014	03 Dec 2014	19 Jun 2014
BH310-1	SE128733.022	LB059293	10 Jun 2014	11 Jun 2014	07 Dec 2014	18 Jun 2014	07 Dec 2014	19 Jun 2014
BH311-1	SE128733.023	LB059293	10 Jun 2014	11 Jun 2014	07 Dec 2014	18 Jun 2014	07 Dec 2014	19 Jun 2014
BH311-2	SE128733.024	LB059293	10 Jun 2014	11 Jun 2014	07 Dec 2014	18 Jun 2014	07 Dec 2014	19 Jun 2014
BH312-1	SE128733.025	LB059293	10 Jun 2014	11 Jun 2014	07 Dec 2014	18 Jun 2014	07 Dec 2014	19 Jun 2014
BH313-1	SE128733.026	LB059293	10 Jun 2014	11 Jun 2014	07 Dec 2014	18 Jun 2014	07 Dec 2014	19 Jun 2014
BH314-1	SE128733.028	LB059293	10 Jun 2014	11 Jun 2014	07 Dec 2014	18 Jun 2014	07 Dec 2014	19 Jun 2014
BH314-3	SE128733.029	LB059342	10 Jun 2014	11 Jun 2014	07 Dec 2014	19 Jun 2014	07 Dec 2014	20 Jun 2014
B300	SE128733.034	LB059342	10 Jun 2014	11 Jun 2014	07 Dec 2014	19 Jun 2014	07 Dec 2014	20 Jun 2014
EIL-1	SE128733.035	LB059342	10 Jun 2014	11 Jun 2014	07 Dec 2014	19 Jun 2014	07 Dec 2014	20 Jun 2014

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
R300	SE128733.032	LB059206	06 Jun 2014	11 Jun 2014	03 Dec 2014	17 Jun 2014	03 Dec 2014	23 Jun 2014
R301	SE128733.033	LB059206	10 Jun 2014	11 Jun 2014	07 Dec 2014	17 Jun 2014	07 Dec 2014	23 Jun 2014

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-5	SE128733.003	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH302-1	SE128733.004	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH303-1	SE128733.006	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH304-1	SE128733.008	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-2	SE128733.009	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH305-1	SE128733.010	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-1	SE128733.012	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-4	SE128733.013	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-6	SE128733.014	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-1	SE128733.015	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-2	SE128733.016	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-3	SE128733.017	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-1	SE128733.018	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-3	SE128733.019	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-1	SE128733.020	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-3	SE128733.021	LB059231	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH310-1	SE128733.022	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-1	SE128733.023	LB059231	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-2	SE128733.024	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH312-1	SE128733.025	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-1	SE128733.026	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-3	SE128733.027	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-1	SE128733.028	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-3	SE128733.029	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
B300	SE128733.034	LB059233	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
R300	SE128733.032	LB059235	06 Jun 2014	11 Jun 2014	13 Jun 2014	17 Jun 2014†	27 Jul 2014	23 Jun 2014
R301	SE128733.033	LB059235	10 Jun 2014	11 Jun 2014	17 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-2	SE128733.002	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-5	SE128733.003	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH302-1	SE128733.004	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH303-1	SE128733.006	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-1	SE128733.008	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-2	SE128733.009	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-1	SE128733.012	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-4	SE128733.013	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-6	SE128733.014	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-1	SE128733.015	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-2	SE128733.016	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-3	SE128733.017	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-1	SE128733.018	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-3	SE128733.019	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-1	SE128733.020	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-3	SE128733.021	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH310-1	SE128733.022	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-1	SE128733.023	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH312-1	SE128733.025	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-1	SE128733.026	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-3	SE128733.027	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-1	SE128733.028	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-3	SE128733.029	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
Trip Blank	SE128733.030	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
Trip Spike	SE128733.031	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
B300	SE128733.034	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Name	Sample No.	QC Ref

HOLDING TIME SUMMARY

SE128733 R0

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
R300	SE128733.032	LB059254	06 Jun 2014	11 Jun 2014	13 Jun 2014	17 Jun 2014†	27 Jul 2014	23 Jun 2014
R301	SE128733.033	LB059254	10 Jun 2014	11 Jun 2014	17 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH301-1	SE128733.001	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-2	SE128733.002	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH301-5	SE128733.003	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH302-1	SE128733.004	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH303-1	SE128733.006	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-1	SE128733.008	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH304-2	SE128733.009	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-1	SE128733.012	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-4	SE128733.013	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH306-6	SE128733.014	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-1	SE128733.015	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-2	SE128733.016	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH307-3	SE128733.017	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-1	SE128733.018	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH308-3	SE128733.019	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-1	SE128733.020	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH309-3	SE128733.021	LB059219	06 Jun 2014	11 Jun 2014	20 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH310-1	SE128733.022	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH311-1	SE128733.023	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH312-1	SE128733.025	LB059219	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-1	SE128733.026	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH313-3	SE128733.027	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-1	SE128733.028	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
BH314-3	SE128733.029	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
Trip Blank	SE128733.030	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
Trip Spike	SE128733.031	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014
B300	SE128733.034	LB059220	10 Jun 2014	11 Jun 2014	24 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
R300	SE128733.032	LB059254	06 Jun 2014	11 Jun 2014	13 Jun 2014	17 Jun 2014†	27 Jul 2014	23 Jun 2014
R301	SE128733.033	LB059254	10 Jun 2014	11 Jun 2014	17 Jun 2014	17 Jun 2014	27 Jul 2014	23 Jun 2014

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	100
	BH302-1	SE128733.004	%	60 - 130%	115
	BH303-1	SE128733.006	%	60 - 130%	111
	BH304-1	SE128733.008	%	60 - 130%	103
	BH305-1	SE128733.010	%	60 - 130%	92
	BH306-1	SE128733.012	%	60 - 130%	95
	BH307-1	SE128733.015	%	60 - 130%	105
	BH308-1	SE128733.018	%	60 - 130%	90
	BH309-1	SE128733.020	%	60 - 130%	93
	BH311-1	SE128733.023	%	60 - 130%	70
	BH311-2	SE128733.024	%	60 - 130%	121
	BH312-1	SE128733.025	%	60 - 130%	122
	BH313-1	SE128733.026	%	60 - 130%	115

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	84
	BH302-1	SE128733.004	%	60 - 130%	88
	BH303-1	SE128733.006	%	60 - 130%	90
	BH304-1	SE128733.008	%	60 - 130%	84
	BH305-1	SE128733.010	%	60 - 130%	84
	BH306-1	SE128733.012	%	60 - 130%	84
	BH307-1	SE128733.015	%	60 - 130%	86
	BH308-1	SE128733.018	%	60 - 130%	86
	BH309-1	SE128733.020	%	60 - 130%	84
	BH311-1	SE128733.023	%	60 - 130%	90
	BH311-2	SE128733.024	%	60 - 130%	82
	BH312-1	SE128733.025	%	60 - 130%	82
	BH313-1	SE128733.026	%	60 - 130%	90
d14-p-terphenyl (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	76
	BH302-1	SE128733.004	%	60 - 130%	74
	BH303-1	SE128733.006	%	60 - 130%	82
	BH304-1	SE128733.008	%	60 - 130%	72
	BH305-1	SE128733.010	%	60 - 130%	70
	BH306-1	SE128733.012	%	60 - 130%	78
	BH307-1	SE128733.015	%	60 - 130%	82
	BH308-1	SE128733.018	%	60 - 130%	70
	BH309-1	SE128733.020	%	60 - 130%	72
	BH311-1	SE128733.023	%	60 - 130%	80
	BH311-2	SE128733.024	%	60 - 130%	74
	BH312-1	SE128733.025	%	60 - 130%	76
	BH313-1	SE128733.026	%	60 - 130%	88

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	84
	BH302-1	SE128733.004	%	60 - 130%	88
	BH303-1	SE128733.006	%	60 - 130%	90
	BH304-1	SE128733.008	%	60 - 130%	84
	BH304-2	SE128733.009	%	60 - 130%	86
	BH307-1	SE128733.015	%	60 - 130%	86
	BH307-2	SE128733.016	%	60 - 130%	86
	BH308-1	SE128733.018	%	60 - 130%	86
	BH308-3	SE128733.019	%	60 - 130%	88
	BH309-1	SE128733.020	%	60 - 130%	84
	BH309-3	SE128733.021	%	60 - 130%	90
	BH310-1	SE128733.022	%	60 - 130%	84
	BH311-1	SE128733.023	%	60 - 130%	84
	BH311-2	SE128733.024	%	60 - 130%	82
	BH312-1	SE128733.025	%	60 - 130%	82
	BH313-1	SE128733.026	%	60 - 130%	90
	BH313-3	SE128733.027	%	60 - 130%	82

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH314-1	SE128733.028	%	60 - 130%	86
	BH314-3	SE128733.029	%	60 - 130%	84
d14-p-terphenyl (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	76
	BH302-1	SE128733.004	%	60 - 130%	74
	BH303-1	SE128733.006	%	60 - 130%	82
	BH304-1	SE128733.008	%	60 - 130%	72
	BH304-2	SE128733.009	%	60 - 130%	72
	BH307-1	SE128733.015	%	60 - 130%	82
	BH307-2	SE128733.016	%	60 - 130%	76
	BH308-1	SE128733.018	%	60 - 130%	70
	BH308-3	SE128733.019	%	60 - 130%	76
	BH309-1	SE128733.020	%	60 - 130%	72
	BH309-3	SE128733.021	%	60 - 130%	80
	BH310-1	SE128733.022	%	60 - 130%	74
	BH311-1	SE128733.023	%	60 - 130%	74
	BH311-2	SE128733.024	%	60 - 130%	74
	BH312-1	SE128733.025	%	60 - 130%	76
	BH313-1	SE128733.026	%	60 - 130%	88
	BH313-3	SE128733.027	%	60 - 130%	84
	BH314-1	SE128733.028	%	60 - 130%	74
	BH314-3	SE128733.029	%	60 - 130%	80
d5-nitrobenzene (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	92
	BH302-1	SE128733.004	%	60 - 130%	100
	BH303-1	SE128733.006	%	60 - 130%	102
	BH304-1	SE128733.008	%	60 - 130%	92
	BH304-2	SE128733.009	%	60 - 130%	92
	BH307-1	SE128733.015	%	60 - 130%	96
	BH307-2	SE128733.016	%	60 - 130%	88
	BH308-1	SE128733.018	%	60 - 130%	94
	BH308-3	SE128733.019	%	60 - 130%	94
	BH309-1	SE128733.020	%	60 - 130%	88
	BH309-3	SE128733.021	%	60 - 130%	92
	BH310-1	SE128733.022	%	60 - 130%	88
	BH311-1	SE128733.023	%	60 - 130%	90
	BH311-2	SE128733.024	%	60 - 130%	86
	BH312-1	SE128733.025	%	60 - 130%	88
	BH313-1	SE128733.026	%	60 - 130%	94
	BH313-3	SE128733.027	%	60 - 130%	96
	BH314-1	SE128733.028	%	60 - 130%	94
	BH314-3	SE128733.029	%	60 - 130%	92

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	100
	BH302-1	SE128733.004	%	60 - 130%	115
	BH303-1	SE128733.006	%	60 - 130%	111
	BH304-1	SE128733.008	%	60 - 130%	103
	BH305-1	SE128733.010	%	60 - 130%	92
	BH306-1	SE128733.012	%	60 - 130%	95
	BH307-1	SE128733.015	%	60 - 130%	105
	BH308-1	SE128733.018	%	60 - 130%	90
	BH309-1	SE128733.020	%	60 - 130%	93
	BH311-1	SE128733.023	%	60 - 130%	70
	BH311-2	SE128733.024	%	60 - 130%	121
	BH312-1	SE128733.025	%	60 - 130%	122
	BH313-1	SE128733.026	%	60 - 130%	115

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	85
	BH301-2	SE128733.002	%	60 - 130%	94
	BH301-5	SE128733.003	%	60 - 130%	86

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued) — Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH302-1	SE128733.004	%	60 - 130%	81
	BH303-1	SE128733.006	%	60 - 130%	78
	BH304-1	SE128733.008	%	60 - 130%	78
	BH304-2	SE128733.009	%	60 - 130%	79
	BH306-1	SE128733.012	%	60 - 130%	81
	BH306-4	SE128733.013	%	60 - 130%	86
	BH306-6	SE128733.014	%	60 - 130%	99
	BH307-1	SE128733.015	%	60 - 130%	73
	BH307-2	SE128733.016	%	60 - 130%	87
	BH307-3	SE128733.017	%	60 - 130%	88
	BH308-1	SE128733.018	%	60 - 130%	88
	BH308-3	SE128733.019	%	60 - 130%	94
	BH309-1	SE128733.020	%	60 - 130%	98
	BH309-3	SE128733.021	%	60 - 130%	78
	BH310-1	SE128733.022	%	60 - 130%	84
	BH311-1	SE128733.023	%	60 - 130%	85
	BH312-1	SE128733.025	%	60 - 130%	88
	BH313-1	SE128733.026	%	60 - 130%	92
	BH313-3	SE128733.027	%	60 - 130%	85
	BH314-1	SE128733.028	%	60 - 130%	92
	BH314-3	SE128733.029	%	60 - 130%	78
	Trip Blank	SE128733.030	%	60 - 130%	94
	Trip Spike	SE128733.031	%	60 - 130%	122
	B300	SE128733.034	%	60 - 130%	86
d4-1,2-dichloroethane (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	106
	BH301-2	SE128733.002	%	60 - 130%	113
	BH301-5	SE128733.003	%	60 - 130%	107
	BH302-1	SE128733.004	%	60 - 130%	106
	BH303-1	SE128733.006	%	60 - 130%	97
	BH304-1	SE128733.008	%	60 - 130%	98
	BH304-2	SE128733.009	%	60 - 130%	102
	BH306-1	SE128733.012	%	60 - 130%	84
	BH306-4	SE128733.013	%	60 - 130%	90
	BH306-6	SE128733.014	%	60 - 130%	103
	BH307-1	SE128733.015	%	60 - 130%	82
	BH307-2	SE128733.016	%	60 - 130%	92
	BH307-3	SE128733.017	%	60 - 130%	88
	BH308-1	SE128733.018	%	60 - 130%	95
	BH308-3	SE128733.019	%	60 - 130%	96
	BH309-1	SE128733.020	%	60 - 130%	110
	BH309-3	SE128733.021	%	60 - 130%	89
	BH310-1	SE128733.022	%	60 - 130%	93
	BH311-1	SE128733.023	%	60 - 130%	91
	BH312-1	SE128733.025	%	60 - 130%	100
	BH313-1	SE128733.026	%	60 - 130%	91
	BH313-3	SE128733.027	%	60 - 130%	91
	BH314-1	SE128733.028	%	60 - 130%	89
	BH314-3	SE128733.029	%	60 - 130%	80
	Trip Blank	SE128733.030	%	60 - 130%	99
	Trip Spike	SE128733.031	%	60 - 130%	102
	B300	SE128733.034	%	60 - 130%	90
d8-toluene (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	114
	BH301-2	SE128733.002	%	60 - 130%	93
	BH301-5	SE128733.003	%	60 - 130%	86
	BH302-1	SE128733.004	%	60 - 130%	96
	BH303-1	SE128733.006	%	60 - 130%	93
	BH304-1	SE128733.008	%	60 - 130%	97
	BH304-2	SE128733.009	%	60 - 130%	100
	BH306-1	SE128733.012	%	60 - 130%	88
	BH306-4	SE128733.013	%	60 - 130%	97
	BH306-6	SE128733.014	%	60 - 130%	97

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	BH307-1	SE128733.015	%	60 - 130%	71
	BH307-2	SE128733.016	%	60 - 130%	86
	BH307-3	SE128733.017	%	60 - 130%	94
	BH308-1	SE128733.018	%	60 - 130%	107
	BH308-3	SE128733.019	%	60 - 130%	89
	BH309-1	SE128733.020	%	60 - 130%	114
	BH309-3	SE128733.021	%	60 - 130%	94
	BH310-1	SE128733.022	%	60 - 130%	93
	BH311-1	SE128733.023	%	60 - 130%	83
	BH312-1	SE128733.025	%	60 - 130%	101
	BH313-1	SE128733.026	%	60 - 130%	96
	BH313-3	SE128733.027	%	60 - 130%	96
	BH314-1	SE128733.028	%	60 - 130%	96
	BH314-3	SE128733.029	%	60 - 130%	82
	Trip Blank	SE128733.030	%	60 - 130%	115
	Trip Spike	SE128733.031	%	60 - 130%	118
	B300	SE128733.034	%	60 - 130%	97
Dibromofluoromethane (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	84
	BH301-2	SE128733.002	%	60 - 130%	78
	BH301-5	SE128733.003	%	60 - 130%	77
	BH302-1	SE128733.004	%	60 - 130%	81
	BH303-1	SE128733.006	%	60 - 130%	74
	BH304-1	SE128733.008	%	60 - 130%	73
	BH304-2	SE128733.009	%	60 - 130%	76
	BH306-1	SE128733.012	%	60 - 130%	73
	BH306-4	SE128733.013	%	60 - 130%	77
	BH306-6	SE128733.014	%	60 - 130%	80
	BH307-1	SE128733.015	%	60 - 130%	81
	BH307-2	SE128733.016	%	60 - 130%	72
	BH307-3	SE128733.017	%	60 - 130%	73
	BH308-1	SE128733.018	%	60 - 130%	81
	BH308-3	SE128733.019	%	60 - 130%	76
	BH309-1	SE128733.020	%	60 - 130%	92
	BH309-3	SE128733.021	%	60 - 130%	73
	BH310-1	SE128733.022	%	60 - 130%	77
	BH311-1	SE128733.023	%	60 - 130%	72
	BH312-1	SE128733.025	%	60 - 130%	82
	BH313-1	SE128733.026	%	60 - 130%	74
	BH313-3	SE128733.027	%	60 - 130%	75
	BH314-1	SE128733.028	%	60 - 130%	74
	BH314-3	SE128733.029	%	60 - 130%	84
	Trip Blank	SE128733.030	%	60 - 130%	85
	Trip Spike	SE128733.031	%	60 - 130%	89
	B300	SE128733.034	%	60 - 130%	75

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	R300	SE128733.032	%	40 - 130%	87
	R301	SE128733.033	%	40 - 130%	87
d4-1,2-dichloroethane (Surrogate)	R300	SE128733.032	%	40 - 130%	111
	R301	SE128733.033	%	40 - 130%	113
d8-toluene (Surrogate)	R300	SE128733.032	%	40 - 130%	101
	R301	SE128733.033	%	40 - 130%	102
Dibromofluoromethane (Surrogate)	R300	SE128733.032	%	40 - 130%	93
	R301	SE128733.033	%	40 - 130%	103

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	85
	BH301-5	SE128733.003	%	60 - 130%	76
	BH302-1	SE128733.004	%	60 - 130%	81
	BH303-1	SE128733.006	%	60 - 130%	78

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH304-1	SE128733.008	%	60 - 130%	78
	BH304-2	SE128733.009	%	60 - 130%	79
	BH306-1	SE128733.012	%	60 - 130%	81
	BH306-4	SE128733.013	%	60 - 130%	86
	BH306-6	SE128733.014	%	60 - 130%	88
	BH307-1	SE128733.015	%	60 - 130%	77
	BH307-2	SE128733.016	%	60 - 130%	88
	BH307-3	SE128733.017	%	60 - 130%	88
	BH308-1	SE128733.018	%	60 - 130%	88
	BH308-3	SE128733.019	%	60 - 130%	86
	BH309-1	SE128733.020	%	60 - 130%	98
	BH309-3	SE128733.021	%	60 - 130%	78
	BH310-1	SE128733.022	%	60 - 130%	84
	BH311-1	SE128733.023	%	60 - 130%	83
	BH312-1	SE128733.025	%	60 - 130%	88
	BH313-1	SE128733.026	%	60 - 130%	92
	BH313-3	SE128733.027	%	60 - 130%	85
	BH314-1	SE128733.028	%	60 - 130%	92
	BH314-3	SE128733.029	%	60 - 130%	78
	Trip Blank	SE128733.030	%	60 - 130%	94
	B300	SE128733.034	%	60 - 130%	86
d4-1,2-dichloroethane (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	106
	BH301-5	SE128733.003	%	60 - 130%	97
	BH302-1	SE128733.004	%	60 - 130%	106
	BH303-1	SE128733.006	%	60 - 130%	97
	BH304-1	SE128733.008	%	60 - 130%	98
	BH304-2	SE128733.009	%	60 - 130%	102
	BH306-1	SE128733.012	%	60 - 130%	84
	BH306-4	SE128733.013	%	60 - 130%	90
	BH306-6	SE128733.014	%	60 - 130%	99
	BH307-1	SE128733.015	%	60 - 130%	79
	BH307-2	SE128733.016	%	60 - 130%	89
	BH307-3	SE128733.017	%	60 - 130%	88
	BH308-1	SE128733.018	%	60 - 130%	95
	BH308-3	SE128733.019	%	60 - 130%	92
	BH309-1	SE128733.020	%	60 - 130%	110
	BH309-3	SE128733.021	%	60 - 130%	89
	BH310-1	SE128733.022	%	60 - 130%	93
	BH311-1	SE128733.023	%	60 - 130%	87
	BH312-1	SE128733.025	%	60 - 130%	100
	BH313-1	SE128733.026	%	60 - 130%	91
	BH313-3	SE128733.027	%	60 - 130%	91
	BH314-1	SE128733.028	%	60 - 130%	89
	BH314-3	SE128733.029	%	60 - 130%	80
	Trip Blank	SE128733.030	%	60 - 130%	99
	B300	SE128733.034	%	60 - 130%	90
d8-toluene (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	114
	BH301-5	SE128733.003	%	60 - 130%	98
	BH302-1	SE128733.004	%	60 - 130%	96
	BH303-1	SE128733.006	%	60 - 130%	93
	BH304-1	SE128733.008	%	60 - 130%	97
	BH304-2	SE128733.009	%	60 - 130%	100
	BH306-1	SE128733.012	%	60 - 130%	88
	BH306-4	SE128733.013	%	60 - 130%	97
	BH306-6	SE128733.014	%	60 - 130%	103
	BH307-1	SE128733.015	%	60 - 130%	79
	BH307-2	SE128733.016	%	60 - 130%	93
	BH307-3	SE128733.017	%	60 - 130%	94
	BH308-1	SE128733.018	%	60 - 130%	107
	BH308-3	SE128733.019	%	60 - 130%	95
	BH309-1	SE128733.020	%	60 - 130%	114

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	BH309-3	SE128733.021	%	60 - 130%	94
	BH310-1	SE128733.022	%	60 - 130%	93
	BH311-1	SE128733.023	%	60 - 130%	88
	BH312-1	SE128733.025	%	60 - 130%	101
	BH313-1	SE128733.026	%	60 - 130%	96
	BH313-3	SE128733.027	%	60 - 130%	96
	BH314-1	SE128733.028	%	60 - 130%	96
	BH314-3	SE128733.029	%	60 - 130%	82
	Trip Blank	SE128733.030	%	60 - 130%	115
	B300	SE128733.034	%	60 - 130%	97
Dibromofluoromethane (Surrogate)	BH301-1	SE128733.001	%	60 - 130%	84
	BH301-5	SE128733.003	%	60 - 130%	76
	BH302-1	SE128733.004	%	60 - 130%	81
	BH303-1	SE128733.006	%	60 - 130%	74
	BH304-1	SE128733.008	%	60 - 130%	73
	BH304-2	SE128733.009	%	60 - 130%	76
	BH306-1	SE128733.012	%	60 - 130%	73
	BH306-4	SE128733.013	%	60 - 130%	77
	BH306-6	SE128733.014	%	60 - 130%	83
	BH307-1	SE128733.015	%	60 - 130%	82
	BH307-2	SE128733.016	%	60 - 130%	75
	BH307-3	SE128733.017	%	60 - 130%	73
	BH308-1	SE128733.018	%	60 - 130%	81
	BH308-3	SE128733.019	%	60 - 130%	79
	BH309-1	SE128733.020	%	60 - 130%	92
	BH309-3	SE128733.021	%	60 - 130%	73
	BH310-1	SE128733.022	%	60 - 130%	77
	BH311-1	SE128733.023	%	60 - 130%	73
	BH312-1	SE128733.025	%	60 - 130%	82
	BH313-1	SE128733.026	%	60 - 130%	74
	BH313-3	SE128733.027	%	60 - 130%	75
	BH314-1	SE128733.028	%	60 - 130%	74
	BH314-3	SE128733.029	%	60 - 130%	84
	Trip Blank	SE128733.030	%	60 - 130%	85
	B300	SE128733.034	%	60 - 130%	75

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	R300	SE128733.032	%	60 - 130%	87
	R301	SE128733.033	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	R300	SE128733.032	%	60 - 130%	111
	R301	SE128733.033	%	60 - 130%	113
d8-toluene (Surrogate)	R300	SE128733.032	%	60 - 130%	101
	R301	SE128733.033	%	60 - 130%	102
Dibromofluoromethane (Surrogate)	R300	SE128733.032	%	60 - 130%	93
	R301	SE128733.033	%	60 - 130%	103

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Number	Parameter	Units	LOR	Result
LB059437.001	Mercury	mg/L	0.0001	0.0000

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB059294.001	Mercury	mg/kg	0.01	<0.01
LB059344.001	Mercury	mg/kg	0.01	<0.01

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB059231.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	80
LB059233.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		Delta BHC	mg/kg	0.1	<0.1
		Heptachlor epoxide	mg/kg	0.1	<0.1
		Alpha Endosulfan	mg/kg	0.2	<0.2
		Gamma Chlordane	mg/kg	0.1	<0.1
		Alpha Chlordane	mg/kg	0.1	<0.1
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB059233.001		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	110

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB059231.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	88
LB059233.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	92
		d14-p-terphenyl (Surrogate)	%	-	80

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB059231.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	106
		2-fluorobiphenyl (Surrogate)	%	-	94
		d14-p-terphenyl (Surrogate)	%	-	88
LB059233.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB059233.001		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	98
		2-fluorobiphenyl (Surrogate)	%	-	92
		d14-p-terphenyl (Surrogate)	%	-	80

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB059231.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	80
LB059233.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2
		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 1248	mg/kg	0.2	<0.2
		Arochlor 1254	mg/kg	0.2	<0.2
		Arochlor 1260	mg/kg	0.2	<0.2
		Arochlor 1262	mg/kg	0.2	<0.2
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	110

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN289

Sample Number	Parameter	Units	LOR	Result
LB059346.001	Total Phenols	mg/kg	0.1	<0.1

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB059293.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5
LB059342.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB059206.001	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB059231.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110
LB059233.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB059235.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB059219.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		Iodomethane	mg/kg	5	<5
		1,1-dichloroethene	mg/kg	0.1	<0.1
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1
		trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1
		1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	<0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1
		1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		cis-1,4-dichloro-2-butene	mg/kg	1	<1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB059219.001	Halogenated Aliphatics	trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1
		4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		o-xylene	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1
		1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate	mg/kg	10	<10
		MEK (2-butanone)	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1
		2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	87
		d4-1,2-dichloroethane (Surrogate)	%	-	118
		d8-toluene (Surrogate)	%	-	87
		Bromofluorobenzene (Surrogate)	%	-	91
	Totals	Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform	mg/kg	0.1	<0.1
		Bromodichloromethane	mg/kg	0.1	<0.1
		Chlorodibromomethane	mg/kg	0.1	<0.1
		Bromoform	mg/kg	0.1	<0.1
LB059220.001	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1
	Hydrocarbons	Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	95
		d4-1,2-dichloroethane (Surrogate)	%	-	119
		d8-toluene (Surrogate)	%	-	110
		Bromofluorobenzene (Surrogate)	%	-	112
	Totals	Total BTEX*	mg/kg	0.6	<0.6

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number	Parameter	Units	LOR

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

VOCs in Water (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result
LB059254.001	Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	0.5	<0.5
		Toluene	µg/L	0.5	<0.5
		Ethylbenzene	µg/L	0.5	<0.5
		m/p-xylene	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	107
		d4-1,2-dichloroethane (Surrogate)	%	-	105
		d8-toluene (Surrogate)	%	-	99
		Bromofluorobenzene (Surrogate)	%	-	90

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB059219.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	90
		d4-1,2-dichloroethane (Surrogate)	%	-	108
		d8-toluene (Surrogate)	%	-	101
LB059220.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	120
		d4-1,2-dichloroethane (Surrogate)	%	-	82
		d8-toluene (Surrogate)	%	-	115

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB059254.001		TRH C6-C9	µg/L	40	<40
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	107
		d4-1,2-dichloroethane (Surrogate)	%	-	105
		d8-toluene (Surrogate)	%	-	99
		Bromofluorobenzene (Surrogate)	%	-	90

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128897.001	LB059437.008	Mercury	µg/L	0.0001	<0.0001	0.0000	200	56

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.028	LB059294.024	Mercury	mg/kg	0.01	0.13	0.19	61	32
SE128740.004	LB059344.014	Mercury	mg/kg	0.01	0.16	0.19	59	18
SE128742.005	LB059344.021	Mercury	mg/kg	0.01	0.01	0.01	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.010	LB059328.011	% Moisture	%w/w	0.5	4.6	4.8	51	5
SE128733.020	LB059328.022	% Moisture	%	0.5	5.5	5.6	48	1
SE128733.030	LB059328.033	% Moisture	%	0.5	<0.5	<0.5	200	0
SE128733.035	LB059328.036	% Moisture	%	0.5	46	38	32	19

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.020	LB059231.024		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	4
SE128733.026	LB059233.007		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.026	LB059233.007		Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	1
SE128740.001	LB059233.015		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<0.2	<0.2	200	0
			Endrin	mg/kg	0.2	<0.2	<0.2	200	0
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.17	0.18	30	5

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.015	LB059231.017		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
SE128733.026	LB059233.007		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OP Pesticides in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.026	LB059233.007		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	9
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
SE128740.001	LB059233.015		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	4

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.015	LB059231.019		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	0.1	200	10
			Pyrene	mg/kg	0.1	0.1	0.1	113	17
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
SE128733.026	LB059233.008		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.026	LB059233.008		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	9
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
SE128740.001	LB059233.016		Naphthalene	mg/kg	0.1	0.4	0.3	61	31
			2-methylnaphthalene	mg/kg	0.1	0.2	0.1	99	62
			1-methylnaphthalene	mg/kg	0.1	0.2	<0.1	101	62
			Acenaphthylene	mg/kg	0.1	1.5	1.2	38	21
			Acenaphthene	mg/kg	0.1	0.1	0.1	113	17
			Fluorene	mg/kg	0.1	0.7	0.4	49	45
			Phenanthrene	mg/kg	0.1	7.1	5.2	32	32
			Anthracene	mg/kg	0.1	2.1	1.5	36	36 ②
			Fluoranthene	mg/kg	0.1	20	12	31	53 ②
			Pyrene	mg/kg	0.1	15	14	31	5
			Benzo(a)anthracene	mg/kg	0.1	9.2	7.1	31	26
			Chrysene	mg/kg	0.1	7.0	6.4	31	8
			Benzo(b&j)fluoranthene	mg/kg	0.1	13	10	31	25
			Benzo(k)fluoranthene	mg/kg	0.1	2.8	2.4	34	16
			Benzo(a)pyrene	mg/kg	0.1	9.5	7.5	31	23
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	6.5	6.2	32	4
			Dibenzo(a&h)anthracene	mg/kg	0.1	1.0	0.9	40	8
			Benzo(ghi)perylene	mg/kg	0.1	4.7	4.5	32	5
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	14	11	12	21 †
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3	14	11	12	21 ②
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	14	11	12	21 ②
			Total PAH	mg/kg	0.8	100	80	31	24
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	2
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.020	LB059231.024		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	4
SE128733.026	LB059233.007		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.026	LB059233.007		Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	1
SE128740.001	LB059233.015		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1260	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	0
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	5

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128712.013	LB059303.012	pH	pH Units	-	5.3	5.3	32	1
SE128733.035	LB059303.014	pH	pH Units	-	7.2	7.2	31	0

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN289

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.013	LB059346.004	Total Phenols	mg/kg	0.1	0.3	0.3	47	3

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.015	LB059293.014	Arsenic, As	mg/kg	3	10	11	40	2
		Cadmium, Cd	mg/kg	0.3	11	8.5	33	28
		Chromium, Cr	mg/kg	0.3	75	76	31	1
		Copper, Cu	mg/kg	0.5	18000	19000	30	3
		Lead, Pb	mg/kg	1	1400	1300	30	12
		Nickel, Ni	mg/kg	0.5	94	92	31	2
		Zinc, Zn	mg/kg	0.5	7400	7700	30	4
SE128733.028	LB059293.024	Arsenic, As	mg/kg	3	<3	<3	63	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	161	0
		Chromium, Cr	mg/kg	0.3	7.0	6.4	37	10
		Copper, Cu	mg/kg	0.5	110	110	30	4
		Lead, Pb	mg/kg	1	250	240	30	5
		Nickel, Ni	mg/kg	0.5	2.5	2.3	51	6
		Zinc, Zn	mg/kg	0.5	300	290	31	3
SE128740.004	LB059342.014	Arsenic, As	mg/kg	3	5	6	48	8
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	191	0
		Chromium, Cr	mg/kg	0.3	11	11	35	1
		Copper, Cu	mg/kg	0.5	23	22	32	4
		Lead, Pb	mg/kg	1	170	190	31	9
		Nickel, Ni	mg/kg	0.5	3.3	3.1	46	4
		Zinc, Zn	mg/kg	0.5	49	48	34	1
SE128742.005	LB059342.021	Arsenic, As	mg/kg	3	8	8	42	4
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	191	0
		Chromium, Cr	mg/kg	0.3	33	32	32	5
		Copper, Cu	mg/kg	0.5	6.1	5.9	38	3
		Lead, Pb	mg/kg	1	12	12	38	4
		Nickel, Ni	mg/kg	0.5	3.2	4.9	42	43 ②
		Zinc, Zn	mg/kg	0.5	14	14	44	0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Trace Metals (Dissolved) in Water by ICPMS (continued)

Method: ME-(AU)-[ENV]AN318

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128716.003	LB059206.014		Copper, Cu	µg/L	1	2	2	80	2
SE128733.033	LB059206.017		Arsenic, As	µg/L	1	<1	<1	200	0
			Cadmium, Cd	µg/L	0.1	<0.1	<0.1	200	0
			Chromium, Cr	µg/L	1	<1	<1	200	0
			Copper, Cu	µg/L	1	<1	<1	200	0
			Lead, Pb	µg/L	1	<1	<1	200	0
			Nickel, Ni	µg/L	1	<1	<1	200	0
			Zinc, Zn	µg/L	5	15	14	49	5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.015	LB059231.019		TRH C10-C14	mg/kg	20	78	79	55	1
			TRH C15-C28	mg/kg	45	460	490	39	6
			TRH C29-C36	mg/kg	45	56	81	96	36
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	600	650	48	9
			TRH C10-C40 Total	mg/kg	210	600	650	64	9
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	140	140	47	0
			TRH >C16-C34 (F3)	mg/kg	90	450	500	49	10
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE128733.023	LB059231.028		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE128733.026	LB059233.009		TRH C10-C14	mg/kg	20	21	<20	133	5
			TRH C15-C28	mg/kg	45	410	390	41	5
			TRH C29-C36	mg/kg	45	150	160	58	6
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	580	570	49	2
			TRH C10-C40 Total	mg/kg	210	580	570	66	2
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	29	30	115	3
			TRH >C16-C34 (F3)	mg/kg	90	540	520	47	4
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE128740.001	LB059233.017		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	400	370	42	6
			TRH C29-C36	mg/kg	45	230	200	51	17
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	630	570	48	10
			TRH C10-C40 Total	mg/kg	210	630	570	65	10
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	550	510	47	8
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.014	LB059219.014	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	200	0
		Aliphatics	Chloromethane	mg/kg	1	<1	<1	200	0
			Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromomethane	mg/kg	1	<1	<1	200	0
			Chloroethane	mg/kg	1	<1	<1	200	0
			Trichlorofluoromethane	mg/kg	1	<1	<1	200	0
			Iodomethane	mg/kg	5	<5	<5	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued) — **Method: ME-(AU)-[ENV]AN433/AN434**

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.014	LB059219.014	Halogenated	1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
		Aliphatics	Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	200	0
			Allyl chloride	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Bromochloromethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	200	0
			Dibromomethane	mg/kg	0.1	<0.1	<0.1	200	0
			Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,4-dichloro-2-butene	mg/kg	1	<1	<1	200	0
			1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	200	0
			1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated	Chlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatics	Bromobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
			4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
			Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	200	0
			n-propylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	200	0
			n-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Nitrogenous	Acrylonitrile	mg/kg	0.1	<0.1	<0.1	200	0
		Compounds	2-nitropropane	mg/kg	10	<10	<10	200	0
		Oxygenated	Acetone (2-propanone)	mg/kg	10	<10	<10	200	0
		Compounds	MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	200	0
			Vinyl acetate	mg/kg	10	<10	<10	200	0
			MEK (2-butanone)	mg/kg	10	<10	<10	200	0
			MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	200	0
			2-hexanone (MBK)	mg/kg	5	<5	<5	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	<0.5	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.0	3.9	50	2
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.1	5.0	50	2
			d8-toluene (Surrogate)	mg/kg	-	4.8	4.6	50	4
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.0	4.8	50	4
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.014	LB059219.014	Totals	Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
		Trihalomethan	Chloroform	mg/kg	0.1	<0.1	<0.1	200	0
		es	Bromodichloromethane	mg/kg	0.1	<0.1	<0.1	200	0
			Chlorodibromomethane	mg/kg	0.1	<0.1	<0.1	200	0
			Bromoform	mg/kg	0.1	<0.1	<0.1	200	0
SE128733.025	LB059219.025	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.1	3.9	50	4
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	4.7	50	7
			d8-toluene (Surrogate)	mg/kg	-	5.0	4.8	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.2	50	4
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE128749.001	LB059220.012	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	4.0	50	5
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.1	4.3	50	7
			d8-toluene (Surrogate)	mg/kg	-	3.8	4.1	50	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.0	4.2	50	5
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.014	LB059219.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	4.1	30	2
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	4.9	30	2
			d8-toluene (Surrogate)	mg/kg	-	5.2	5.1	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.3	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE128733.025	LB059219.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.1	3.9	30	4
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	4.7	30	7
			d8-toluene (Surrogate)	mg/kg	-	5.0	4.8	30	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.2	30	4
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE128749.001	LB059220.012		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.8	3.7	30	5
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.7	4.4	30	7
			d8-toluene (Surrogate)	mg/kg	-	4.2	4.1	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.1	4.3	30	6
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR)

Method: ME-(AU)-[ENV]AN122

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059397.002	Exchangeable Sodium, Na	mg/kg	2	NA	160	80 - 120	111
	Exchangeable Potassium, K	mg/kg	2	NA	330	80 - 120	94
	Exchangeable Calcium, Ca	mg/kg	2	NA	4347	80 - 120	99
	Exchangeable Magnesium, Mg	mg/kg	2	NA	1578	80 - 120	93

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059294.002	Mercury	mg/kg	0.01	0.21	0.2	70 - 130	104
LB059344.002	Mercury	mg/kg	0.01	0.20	0.2	70 - 130	101

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059231.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	122
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	123
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	115
		Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	123
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	122
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	124
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0.15	40 - 130	93†
LB059233.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	121
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	125
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	124
		Dieldrin	mg/kg	0.2	0.2	0.2	60 - 140	124
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	123
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	99
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0.15	40 - 130	96†

OP Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059231.002		Dichlorvos	mg/kg	0.5	2.0	2	60 - 140	98
		Diazinon (Dimpylate)	mg/kg	0.5	2.0	2	60 - 140	99
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.8	2	60 - 140	91
		Ethion	mg/kg	0.2	1.9	2	60 - 140	93
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78
LB059233.002		Dichlorvos	mg/kg	0.5	1.8	2	60 - 140	89
		Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	84
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.5	2	60 - 140	77
		Ethion	mg/kg	0.2	1.6	2	60 - 140	79
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	76

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059231.002		Naphthalene	mg/kg	0.1	3.7	4	60 - 140	93
		Acenaphthylene	mg/kg	0.1	3.7	4	60 - 140	93
		Acenaphthene	mg/kg	0.1	3.4	4	60 - 140	86
		Phenanthrene	mg/kg	0.1	3.7	4	60 - 140	92
		Anthracene	mg/kg	0.1	3.6	4	60 - 140	89
		Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	93
		Pyrene	mg/kg	0.1	3.3	4	60 - 140	82
		Benzo(a)pyrene	mg/kg	0.1	4.0	4	60 - 140	100
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	92
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78
LB059233.002		Naphthalene	mg/kg	0.1	3.6	4	60 - 140	90
		Acenaphthylene	mg/kg	0.1	3.6	4	60 - 140	90
		Acenaphthene	mg/kg	0.1	3.5	4	60 - 140	87
		Phenanthrene	mg/kg	0.1	3.5	4	60 - 140	88
		Anthracene	mg/kg	0.1	3.5	4	60 - 140	88
		Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	92
		Pyrene	mg/kg	0.1	3.2	4	60 - 140	81

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059233.002		Benzo(a)pyrene	mg/kg	0.1	3.8	4	60 - 140	95
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	84
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	76

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059231.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	116
LB059233.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	119

pH in soil (1:5)

Method: ME-(AU)-[ENV]AN101

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059303.001	pH	pH Units	-	7.4	7.415	98 - 102	99

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN289

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059346.002	Total Phenols	mg/kg	0.1	2.3	2.5	70 - 130	90

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059293.002	Arsenic, As	mg/kg	3	51	50	80 - 120	103
	Cadmium, Cd	mg/kg	0.3	52	50	80 - 120	105
	Chromium, Cr	mg/kg	0.3	52	50	80 - 120	103
	Copper, Cu	mg/kg	0.5	52	50	80 - 120	104
	Lead, Pb	mg/kg	1	51	50	80 - 120	103
	Nickel, Ni	mg/kg	0.5	51	50	80 - 120	103
	Zinc, Zn	mg/kg	0.5	52	50	80 - 120	105
LB059342.002	Arsenic, As	mg/kg	3	48	50	80 - 120	97
	Cadmium, Cd	mg/kg	0.3	49	50	80 - 120	99
	Chromium, Cr	mg/kg	0.3	49	50	80 - 120	98
	Copper, Cu	mg/kg	0.5	47	50	80 - 120	94
	Lead, Pb	mg/kg	1	48	50	80 - 120	97
	Nickel, Ni	mg/kg	0.5	49	50	80 - 120	98
	Zinc, Zn	mg/kg	0.5	49	50	80 - 120	97

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059206.002	Arsenic, As	µg/L	1	19	20	80 - 120	97
	Cadmium, Cd	µg/L	0.1	20	20	80 - 120	101
	Chromium, Cr	µg/L	1	20	20	80 - 120	102
	Copper, Cu	µg/L	1	21	20	80 - 120	105
	Lead, Pb	µg/L	1	21	20	80 - 120	103
	Nickel, Ni	µg/L	1	21	20	80 - 120	106
	Zinc, Zn	µg/L	5	22	20	80 - 120	109

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059231.002		TRH C10-C14	mg/kg	20	40	40	60 - 140	100
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	98
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	85
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	39	40	60 - 140	98
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	95
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	90
LB059233.002		TRH C10-C14	mg/kg	20	41	40	60 - 140	103
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	100
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	98
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	40	40	60 - 140	100
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	100
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	100

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059235.002		TRH C10-C14	µg/L	50	1100	1200	60 - 140	90
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	96
		TRH C29-C36	µg/L	200	1100	1200	60 - 140	94
	TRH F Bands	TRH >C10-C16 (F2)	µg/L	60	1100	1200	60 - 140	91
		TRH >C16-C34 (F3)	µg/L	500	1200	1200	60 - 140	97
		TRH >C34-C40 (F4)	µg/L	500	590	600	60 - 140	98

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059219.002	Halogenated	1,1-dichloroethene	mg/kg	0.1	1.7	2.56	60 - 140	66
	Aliphatics	1,2-dichloroethane	mg/kg	0.1	2.9	2.56	60 - 140	114
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	1.7	2.56	60 - 140	68
	Halogenated	Chlorobenzene	mg/kg	0.1	2.8	2.56	60 - 140	109
	Monocyclic	Benzene	mg/kg	0.1	2.3	2.9	60 - 140	80
	Aromatic	Toluene	mg/kg	0.1	2.2	2.9	60 - 140	76
		Ethylbenzene	mg/kg	0.1	2.3	2.9	60 - 140	80
		m/p-xylene	mg/kg	0.2	4.6	5.8	60 - 140	79
		o-xylene	mg/kg	0.1	2.3	2.9	60 - 140	80
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.4	5	60 - 140	109
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	6.3	5	60 - 140	127
		d8-toluene (Surrogate)	mg/kg	-	4.4	5	60 - 140	88
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.9	5	60 - 140	99
	Trihalomethan	Chloroform	mg/kg	0.1	1.6	2.56	60 - 140	62
LB059220.002	Monocyclic	Benzene	mg/kg	0.1	2.1	2.9	60 - 140	73
	Aromatic	Toluene	mg/kg	0.1	2.8	2.9	60 - 140	96
		Ethylbenzene	mg/kg	0.1	2.7	2.9	60 - 140	91
		m/p-xylene	mg/kg	0.2	5.3	5.8	60 - 140	92
		o-xylene	mg/kg	0.1	2.6	2.9	60 - 140	89
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	6.0	5	60 - 140	119
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	3.9	5	60 - 140	79
		d8-toluene (Surrogate)	mg/kg	-	5.6	5	60 - 140	113
		Bromofluorobenzene (Surrogate)	mg/kg	-	5.6	5	60 - 140	113

VOCs in Water

Method: ME-(AU)-[ENV]AN433/AN434

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059254.002	Monocyclic	Benzene	µg/L	0.5	50	45.45	60 - 140	111
	Aromatic	Toluene	µg/L	0.5	52	45.45	60 - 140	114
		Ethylbenzene	µg/L	0.5	54	45.45	60 - 140	118
		m/p-xylene	µg/L	1	100	90.9	60 - 140	110
		o-xylene	µg/L	0.5	53	45.45	60 - 140	116
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	4.7	5	60 - 140	94
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.8	5	60 - 140	95
		d8-toluene (Surrogate)	µg/L	-	5.0	5	60 - 140	101
		Bromofluorobenzene (Surrogate)	µg/L	-	5.5	5	60 - 140	110

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059219.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	91
		TRH C6-C9	mg/kg	20	22	23.2	60 - 140	93
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.1	5	60 - 140	83
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.2	5	60 - 140	103
		d8-toluene (Surrogate)	mg/kg	-	5.5	5	60 - 140	109
		Bromofluorobenzene (Surrogate)	mg/kg	-	5.2	5	60 - 140	103
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	121
LB059220.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	93
		TRH C6-C9	mg/kg	20	23	23.2	60 - 140	98
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.5	5	60 - 140	111
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.8	5	60 - 140	117
		d8-toluene (Surrogate)	mg/kg	-	5.3	5	60 - 140	105
		Bromofluorobenzene (Surrogate)	mg/kg	-	5.7	5	60 - 140	113
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	103

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria.

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB059254.002		TRH C6-C10	µg/L	50	1100	946.63	60 - 140	118
		TRH C6-C9	µg/L	40	900	818.71	60 - 140	110
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	4.7	5	60 - 140	94
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.8	5	60 - 140	95
		d8-toluene (Surrogate)	µg/L	-	5.0	5	60 - 140	101
		Bromofluorobenzene (Surrogate)	µg/L	-	5.5	5	60 - 140	110
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	810	639.67	60 - 140	127

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub -sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.032	LB059437.004	Mercury	mg/L	0.0001	0.0079	<0.0001	0.008	97

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128706A.07	LB059344.004	Mercury	mg/kg	0.01	0.31	0.12	0.2	95
SE128733.001	LB059294.004	Mercury	mg/kg	0.01	0.16	<0.01	0.2	77

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.006	LB059231.009	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Lindane	mg/kg	0.1	<0.1	<0.1	-	-
		Heptachlor	mg/kg	0.1	0.1	<0.1	0.2	75
		Aldrin	mg/kg	0.1	0.2	<0.1	0.2	76
		Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
		Delta BHC	mg/kg	0.1	0.1	<0.1	0.2	69
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	-	-
		trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	-	-
		Dieldrin	mg/kg	0.2	<0.2	<0.2	0.2	74
		Endrin	mg/kg	0.2	<0.2	<0.2	0.2	79
		o,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		o,p'-DDT	mg/kg	0.1	<0.1	<0.1	-	-
		Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	-	-
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	-	-
		p,p'-DDT	mg/kg	0.1	0.2	<0.1	0.2	90
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	-
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	-
		Endrin Ketone	mg/kg	0.1	<0.1	<0.1	-	-
		Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
		Mirex	mg/kg	0.1	<0.1	<0.1	-	-
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-	113

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.006	LB059231.009	Naphthalene	mg/kg	0.1	3.5	<0.1	4	87
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	3.6	<0.1	4	90
		Acenaphthene	mg/kg	0.1	3.3	<0.1	4	82
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	3.5	<0.1	4	89
		Anthracene	mg/kg	0.1	3.5	<0.1	4	89
		Fluoranthene	mg/kg	0.1	3.6	<0.1	4	89
		Pyrene	mg/kg	0.1	3.1	<0.1	4	76
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(a)pyrene	mg/kg	0.1	3.8	<0.1	4	94
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
		Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ	0.2	3.8	<0.2	-	-

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub -sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.006	LB059231.009		Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3	3.9	<0.3	-	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	3.8	<0.2	-	-
			Total PAH	mg/kg	0.8	28	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	-	98
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	-	86
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	78

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.008	LB059231.010		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.5	<0.2	0.4	122
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	-	98

Total Phenolics in Soil

Method: ME-(AU)-[ENV]AN289

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128739.001	LB059346.015	Total Phenols	mg/kg	0.1	4.9	3.4	2.5	62 ④

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128706A.07	LB059342.004	Arsenic, As	mg/kg	3	43	5	50	74
8		Cadmium, Cd	mg/kg	0.3	40	0.8	50	77
		Chromium, Cr	mg/kg	0.3	41	1.2	50	80
		Copper, Cu	mg/kg	0.5	48	7.9	50	80
		Lead, Pb	mg/kg	1	53	13	50	79
		Nickel, Ni	mg/kg	0.5	43	4.0	50	77
		Zinc, Zn	mg/kg	0.5	330	300	50	64 ④
SE128733.001	LB059293.004	Arsenic, As	mg/kg	3	41	<3	50	78
		Cadmium, Cd	mg/kg	0.3	41	0.5	50	81
		Chromium, Cr	mg/kg	0.3	54	11	50	85
		Copper, Cu	mg/kg	0.5	96	53	50	87
		Lead, Pb	mg/kg	1	45	5	50	79
		Nickel, Ni	mg/kg	0.5	84	48	50	71
		Zinc, Zn	mg/kg	0.5	90	45	50	90

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.003	LB059231.007		TRH C10-C14	mg/kg	20	37	<20	40	93
			TRH C15-C28	mg/kg	45	<45	<45	40	88
			TRH C29-C36	mg/kg	45	<45	<45	40	90
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
			TRH C10-C40 Total	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	35	<25	40	88
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	88
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-
SE128733.025	LB059233.006		TRH C10-C14	mg/kg	20	43	<20	40	108
			TRH C15-C28	mg/kg	45	<45	<45	40	103
			TRH C29-C36	mg/kg	45	<45	<45	40	110
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	130	<110	-	-
			TRH C10-C40 Total	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	41	<25	40	103

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub -sample during the sample preparation stage. The original sample's result is subtracted from the sub -sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.025	LB059233.006	TRH F Bands	TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	103
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN433/AN434

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.001	LB059219.004	Monocyclic	Benzene	mg/kg	0.1	2.3	<0.1	2.9	81
		Aromatic	Toluene	mg/kg	0.1	2.5	<0.1	2.9	84
			Ethylbenzene	mg/kg	0.1	2.3	<0.1	2.9	78
			m/p-xylene	mg/kg	0.2	4.3	<0.2	5.8	74
			o-xylene	mg/kg	0.1	2.2	<0.1	2.9	75
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.7	4.2	5	74
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.8	5.3	5	95
			d8-toluene (Surrogate)	mg/kg	-	4.9	5.7	5	99
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.2	5	89
		Totals	Total Xylenes*	mg/kg	0.3	6.5	<0.3	-	-
			Total BTEX*	mg/kg	0.6	14	<0.6	-	-
SE128733.026	LB059220.004	Monocyclic	Benzene	mg/kg	0.1	2.1	<0.1	2.9	72
		Aromatic	Toluene	mg/kg	0.1	2.3	<0.1	2.9	80
			Ethylbenzene	mg/kg	0.1	2.1	<0.1	2.9	72
			m/p-xylene	mg/kg	0.2	4.1	<0.2	5.8	70
			o-xylene	mg/kg	0.1	2.2	<0.1	2.9	76
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	3.7	5	84
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.1	4.5	5	101
			d8-toluene (Surrogate)	mg/kg	-	5.5	4.8	5	109
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.7	4.6	5	113
		Totals	Total Xylenes*	mg/kg	0.3	6.3	<0.3	-	-
			Total BTEX*	mg/kg	0.6	13	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE128733.001	LB059219.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	92
			TRH C6-C9	mg/kg	20	<20	<20	23.2	83
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.7	4.2	5	74
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.8	5.3	5	95
			d8-toluene (Surrogate)	mg/kg	-	4.9	5.7	5	99
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	4.2	5	89
		VPH F	Benzene (F0)	mg/kg	0.1	2.3	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	127
SE128733.026	LB059220.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	87
			TRH C6-C9	mg/kg	20	21	<20	23.2	91
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.2	3.7	5	84
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.1	4.5	5	101
			d8-toluene (Surrogate)	mg/kg	-	5.5	4.8	5	109
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.7	4.6	5	113
		VPH F	Benzene (F0)	mg/kg	0.1	2.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	120

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN400/AN420

QC Sample	Sample Number		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.006	LB059231.010		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	-
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	-
			Lindane	mg/kg	0.1	<0.1	<0.1	200	-
			Heptachlor	mg/kg	0.1	0.1	0.2	96	2
			Aldrin	mg/kg	0.1	0.2	0.2	96	2
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	-
			Delta BHC	mg/kg	0.1	0.1	0.1	102	1
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	-
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	-
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	-
			Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	-
			Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	-
			trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	200	-
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	-
			Dieldrin	mg/kg	0.2	<0.2	<0.2	97	1
			Endrin	mg/kg	0.2	<0.2	<0.2	93	1
			o,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	-
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	-
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	-
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	-
			p,p'-DDT	mg/kg	0.1	0.2	0.2	89	12
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	-
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	-
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	-
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	-
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	-
			Mirex	mg/kg	0.1	<0.1	<0.1	200	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	2

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.006	LB059231.010		Naphthalene	mg/kg	0.1	3.5	3.5	33	2
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	-
			Acenaphthylene	mg/kg	0.1	3.6	3.7	33	2
			Acenaphthene	mg/kg	0.1	3.3	3.4	33	4
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	-
			Phenanthrene	mg/kg	0.1	3.5	3.5	33	2
			Anthracene	mg/kg	0.1	3.5	3.4	33	4
			Fluoranthene	mg/kg	0.1	3.6	3.7	33	5
			Pyrene	mg/kg	0.1	3.1	3.0	33	1
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	-
			Benzo(a)pyrene	mg/kg	0.1	3.8	3.9	33	3
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	-
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ	0.2	3.8	3.9	15	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3	3.9	4.0	18	-
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2	3.8	4.0	15	-
			Total PAH	mg/kg	0.8	28	28	33	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	2
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
SE128733.024	LB059233.005		Naphthalene	mg/kg	0.1		3.5		
			2-methylnaphthalene	mg/kg	0.1		<0.1		
			1-methylnaphthalene	mg/kg	0.1		<0.1		
			Acenaphthylene	mg/kg	0.1		3.6		
			Acenaphthene	mg/kg	0.1		3.1		
			Fluorene	mg/kg	0.1		<0.1		
			Phenanthrene	mg/kg	0.1		3.5		
			Anthracene	mg/kg	0.1		3.6		
			Fluoranthene	mg/kg	0.1		3.5		
			Pyrene	mg/kg	0.1		3.0		
			Benzo(a)anthracene	mg/kg	0.1		<0.1		
			Chrysene	mg/kg	0.1		<0.1		
			Benzo(b&j)fluoranthene	mg/kg	0.1		<0.1		
			Benzo(k)fluoranthene	mg/kg	0.1		<0.1		
			Benzo(a)pyrene	mg/kg	0.1		3.7		
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1		<0.1		
			Dibenzo(a&h)anthracene	mg/kg	0.1		<0.1		
			Benzo(ghi)perylene	mg/kg	0.1		<0.1		
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ	0.2		3.7		
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.3		3.9		
			Carcinogenic PAHs (as BaP TEQ)-assume results	TEQ (mg/kg)	0.2		3.8		
			Total PAH	mg/kg	0.8		27		
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-		0.4		
			2-fluorobiphenyl (Surrogate)	mg/kg	-		0.4		
			d14-p-terphenyl (Surrogate)	mg/kg	-		0.4		

PCBs in Soil

Method: ME-(AU)-[ENV]AN400/AN420

QC Sample	Sample Number	Parameter	Units	LOR

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PCBs in Soil (continued)

Method: ME-(AU)-[ENV]AN400/AN420

QC Sample	Sample Number		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.008	LB059231.011		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	-
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	-
			Arochlor 1232	mg/kg	0.2	<0.2	<0.2	200	-
			Arochlor 1242	mg/kg	0.2	<0.2	<0.2	200	-
			Arochlor 1248	mg/kg	0.2	<0.2	<0.2	200	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	200	-
			Arochlor 1260	mg/kg	0.2	0.5	0.5	71	0
			Arochlor 1262	mg/kg	0.2	<0.2	<0.2	200	-
			Arochlor 1268	mg/kg	0.2	<0.2	<0.2	200	-
			Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	2

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE128733.003	LB059231.008		TRH C10-C14	mg/kg	20	37	36	85	3
			TRH C15-C28	mg/kg	45	<45	<45	160	3
			TRH C29-C36	mg/kg	45	<45	<45	155	0
			TRH C37-C40	mg/kg	100	<100	<100	200	-
			TRH C10-C36 Total	mg/kg	110	<110	<110	133	-
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	-
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	35	34	102	3
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	6
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	-
SE128733.025	LB059233.007		TRH C10-C14	mg/kg	20	43	40	78	7
			TRH C15-C28	mg/kg	45	<45	<45	144	8
			TRH C29-C36	mg/kg	45	<45	45	131	2
			TRH C37-C40	mg/kg	100	<100	<100	200	-
			TRH C10-C36 Total	mg/kg	110	130	120	118	-
			TRH C10-C40 Total	mg/kg	210	<210	<210	197	-
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	41	38	93	8
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	-

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	Non-accredited analysis.
-	Sample not analysed for this analyte.
^	Analysis performed by external laboratory.

IS	Insufficient sample for analysis.
LNR	Sample listed, but not received.
LOR	Limit of reporting.
QFH	QC result is above the upper tolerance.
QFL	QC result is below the lower tolerance.

①	At least 2 of 3 surrogates are within acceptance criteria.
②	RPD failed acceptance criteria due to sample heterogeneity.
③	Results less than 5 times LOR preclude acceptance criteria for RPD.
④	Recovery failed acceptance criteria due to matrix interference.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

APPENDIX B

BOREHOLE LOGS & FIELD DATA SHEETS

ThermoFisher SCIENTIFIC

The world leader in serving science

RENTALS

Equipment Report – Solinst Model 122 Interface Meter

This Meter has been performance checked / calibrated* as follows:

Cleaned/Tested	**Pass?**
Probe	✓
Tape/Reel	✓
☐ Performance Test & Battery Voltage Check (9 v) 8.0v minimum	✓

Date: 19/06/2014 Checked by: MILENKO

Signed:

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
✓	☐	☐	Operations check OK
✓	☐	☐	Plastic Box / Bag
✓	☐	☐	Spare 9V Battery Qty 2
✓	☐	☐	Probe Cleaning Brush
X	☐	☐	Decon
✓	☐	☐	Instruction leaflet
✓	☐	☐	Tape Guide
☐	☐	☐	

Processors Signature/ Initials MS

Quote Reference	CS000883	Condition on return
Customer Ref		
Equipment ID	SOL122-6	
Equipment serial no.	224606	
Return Date	/ /	
Return Time		

ThermoFisher SCIENTIFIC

Equipment Report – Micropurge Kit (MP15)

This system has been performance checked as follows:

Sample Pro Pump		
☑ Components Cleaned / checked	☑ Ops check	
☑ MP15 Controller	☑ Included in kit	☐ Not included in kit
☑ Components Cleaned / checked	☑ Ops check	
☑ Battery check – On/Off	☑ Flow response	

Date: 20/06/2014 Checked by: MILENKO

Signed: JM

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum $20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
☑	☐	☐	MP15 Control & Power Pack
☑	☐	☐	CO2 cylinder (installed in MP15 backpack)
☑	☐	☐	2 Stage gas regulator
☑	☐	☐	Spanner or shifter
☑	☐	☐	Quick Start Guide
☑	☐	☐	MP15 Users Guide + Pump operating instructions
☑	☐	☐	Sample Pro Stainless Steel Pump ID: QSP6PSH
☑	☐	☐ 2X	Bladder
☑	☐	☐	Flow cell ID: EFC500-3
☑	☐	☐	Stainless Steel Hanger Cable 45 m
☑	☐	☐	Spare CO2 Cylinders, quantity: 2
☑	☐	☐	Gas Cylinder CO2 - D Size ID: CO2; CO2; CO2
☑	☐	☐	Maintenance kit (O rings, fittings, SS check ball, collett & screen if applicable)

Processors Signature/ Initials MS

EE Quote Reference	CS0000883	Condition on return
Customer Ref		
Equipment ID	QMP15SH	
Equipment serial no.		
Return Date	/ /	
Return Time		

ThermoFisher SCIENTIFIC

The world leader in serving science

RENTALS

EQUIPMENT CERTIFICATION REPORT

BOTTOM SAMPLING DREDGE

This Dredge Sampler has been checked as follows:

Cleaned	Description
☑	Clean and check all components

Date: 20/06/2014

Checked by: MIGENKO

Signature: [signature]

Please check that the following items are received and all items are returned. Please clean equipment before returning. A $30 service/repair charge applies to any unclean or damaged items.

Sent	Received	Returned	Description
☑	☐	☐	Dredge Sampler with Retaining and Release Pin
☑	☐	☐	Heavy Duty "D" Shackle
☑	☐	☐	Rope with large Stainless Steel Eylet
☑	☐	☐	Laminated quick guide sheet-attached in box
☑	☐	☐	Plastic Box
MS			Processors Signature/ Initials

CLIENT'S REF: P/O NO: _____

CLIENT'S REF: Job NO: _____

QUOTE NO.: CS000870

ID: WPP MC

RETURN DATE: _____/_____/_____

TIME: _____

CONDITION ON RETURN: _____

"We do more than give you great equipment… We give you great solutions!"

Phone: (Free Call) 1300 735 295	Fax: (Free Call) 1800 675 123	Email: RentalsAU@Thermofisher.com		
Melbourne Branch 5 Caribbean Drive, Scoresby 3179	Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113	Adelaide Branch 27 Beulah Road, Norwood, South Australia 5067	Brisbane Branch Unit 2/5 Ross St Newstead 4006	Perth Branch 121 Beringarra Ave Malaga WA 6090

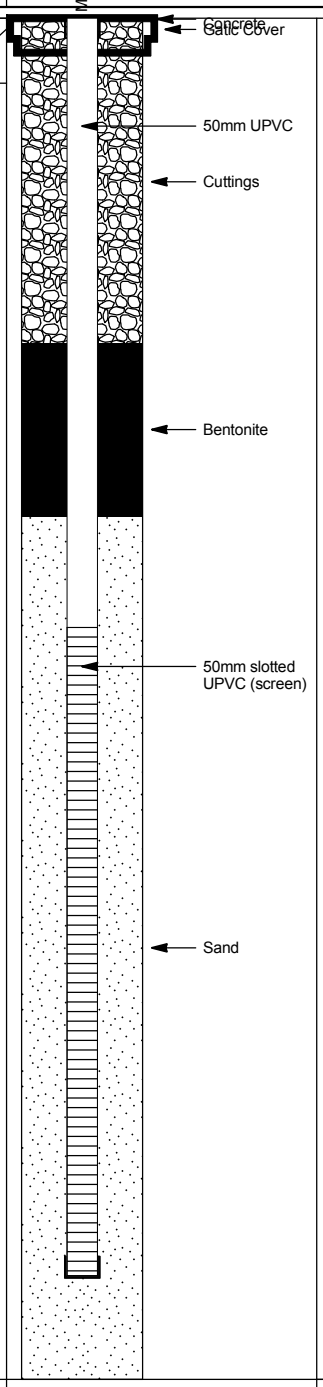
BOREHOLE: BH301/MW1

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY
DT			0					-	FILL: Bitumen 50mm.	-	-
					BH301-1 ES 0.05-0.10 m 0.05 m PID = 134 ppm			-	FILL: Silty SAND and GRAVEL, fine grained sand, fine to medium grained gravel, grey to brown/grey, trace of rootlet. No odour.	D - M	-
				0.30	BH301-2 ES 0.30-0.40 m 0.30 m PID = 104 ppm			-	SANDSTONE: medium grained, orange/yellow, extremely weathered. No odour.		
			1		BH301-3 ES 1.10-1.20 m 1.10 m PID = 92 ppm						
				2.00					From 2m clay seams encountered, red/yellow/orange.		
			2		BH301-4 ES 2.20-2.30 m 2.20 m PID = 105 ppm						
AD/T	-	GWNE	3							M	-
			4	4.20	BH301-5 ES 4.20-4.30 m 4.20 m PID = 193 ppm				From 4.2m became grey to grey/red.		
			5								
			6	6.30					Hole Terminated at 6.30 m Target depth reached.		
			7								

PIEZOMETER DETAILS
ID Static Water Level
MW1



This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

BOREHOLE: BH302

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	GWNE	0		BH302-1 ES 0.10-0.20 m 0.10 m PID = 83 ppm			-	FILL: Silty CLAY, medium to high plasticity, inferred stiff, with some fine to medium grained gravel including ironstone. No odour.		-	FILL
				0.60	BH302-2 ES 0.60-0.70 m 0.60 m PID = 64 ppm			CI	Sandy CLAY: medium to high plasticity, red/orange/grey, inferred stiff. No odour.	M	-	RESIDUAL SOIL
			1	*1.30*	BH302-3 ES 1.40-1.50 m 1.40 m PID = 64 ppm			-	SANDSTONE: fine to medium grained, pale grey to yellow, extremely weathered. No odour.	D	-	ROCK
			2	*2.30*	BH302-4 ES 2.40-2.50 m 2.40 m PID = 89 ppm				From 2.3m became pale red to grey.			
			3	*3.00*					Hole Terminated at 3.00 m Target depth reached.			
			4									
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH303

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
DT			0	0.15	BH303-1 ES 0.00-0.10 m 0.00 m PID = 59 ppm			-	FILL: SAND, CLAY and GRAVEL, fine to medium grained gravel, brown to grey. No odour.		-	FILL
								SC	Clayey SAND: fine to medium grained, brown/red to orange/grey. No odour.			RESIDUAL SOIL
				0.55	BH303-2 ES 0.40-0.50 m 0.40 m PID = 72 ppm			SP	SAND: fine to medium grained, pale yellow/orange/grey. No odour.	M	-	
HA	-	GWNE	1		BH303-3 ES 1.10-1.20 m 1.10 m PID = 41 ppm							
				1.40				-	SANDSTONE: fine to medium grained, pale grey/yellow/red, distinctly weathered. No odour.			ROCK
			2							D	-	
				2.60	BH303-4 ES 2.40-2.50 m 2.40 m PID = 70 ppm				Hole Terminated at 2.60 m Refusal in rock.			
			3									
			4									
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH304

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
AD/T	-	▽	0					-	Timber Floor Decking.		-	
								-	Void.	-	-	
				0.40								
					BH304-1 ES 0.40-0.50 m 0.40 m PID = 40 ppm	■		-	FILL: crushed SANDSTONE, fine to medium grained, red/orange/grey. No odour.		-	FILL
				0.65								
					BH304-2 ES 0.70-0.80 m 0.70 m PID = 65 ppm	■		-	FILL: Silty SAND and GRAVEL, brown to grey/brown. No odour.	M	-	
			1									
				1.20								
					BH304-3 ES 1.20-1.30 m 1.20 m PID = 74 ppm	■		-	SANDSTONE: medium grained, grey to grey/yellow, extremely weathered. No odour.			ROCK
			2							W	-	
					BH304-4 ES 2.40-2.50 m 2.40 m PID = 56 ppm	■						
			3									
					BH304-5 ES 3.10-3.20 m 3.10 m PID = 72 ppm	■						
				3.30					Hole Terminated at 3.30 m Refusal in rock.			
			4									
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH305

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
DT			0					-	FILL: Bitumen 50mm.	-	-	FILL
								-	FILL: Silty SAND and GRAVEL, fine grained sand, fine to medium grained gravel, grey to brown/grey. No odour.		-	
				0.30				SM	Silty SAND: fine to medium grained, orange/red/grey, with some gravel originated from sandstone. No odour.			RESIDUAL SOIL
AD/T	-	GWNE	1		BH305-1 ES 0.05-0.10 m 0.05 m PID = 62 ppm BH305-2 ES 0.40-0.50 m 0.40 m PID = 61 ppm					D	-	
				1.70	BH305-3 ES 1.40-1.50 m 1.40 m PID = 49 ppm			-	SANDSTONE: fine to medium grained, red/grey, with ironstone gravel. No odour.			ROCK
			2	*2.50*	BH305-4 ES 2.00-2.10 m 2.00 m PID = 39 ppm				Hole Terminated at 2.50 m Target depth reached.		-	
			3									
			4									
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

BOREHOLE: BH306/MW2/ASS306

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID Static Water Level MW2
DT			0		BH306-1 ES 0.00-0.10 m 0.00 m PID = 50 ppm			-	FILL: Bitumen 50mm.	-	-	MW2
								-	FILL: SAND, GRAVEL and CLAY, brown to grey brown, trace of glass, timber, brick fragment, concrete. No odour.			Concrete Gatic Cover
					BH306-2 ES 0.40-0.50 m 0.40 m PID = 58 ppm							50mm UPVC
			1		BH306-3/AS306-1 ES 0.90-1.00 m 0.90 m PID = 38 ppm					M	-	Cuttings
					BH306-4/AS306-2 ES 1.40-1.50 m 1.40 m PID = 50 ppm							Bentonite
		▽		*1.90*								
AD/T	-		2		BH306-5/AS306-3 ES 1.90-2.00 m 1.90 m PID = 50 ppm			-	SANDSTONE: fine to medium grained, grey to orange/yellow, extremely weathered. No odour.			
					BH306-6/AS306-4 ES 2.40-2.50 m 2.40 m PID = 103 ppm							50mm slotted UPVC (screen)
			3		AS306-5 ES 3.40-3.50 m					W	-	Sand
			4		AS306-6 ES 3.90-4.00 m BH306-7 ES 4.00-4.10 m 4.00 m PID = 85 ppm							
			5	*5.20*					Hole Terminated at 5.20 m Refusal in rock.			
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

BOREHOLE: BH307

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
DT			0		BH307-1 ES 0.05-0.15 m 0.05 m PID = 89 ppm			-	FILL: Bitumen 50mm.	-	-	FILL
								-	FILL: Silty SAND, CLAY and GRAVEL, fine to medium grained gravel, brown to brown grey, with black staining, trace of brick fragment, concrete, and glass fragment. With hydrocarbon odour.		-	
					BH307-2 ES 0.60-0.70 m 0.60 m PID = 51 ppm							
				0.80				SC	Clayey SAND: medium grained, red/orange/yellow. No odour.	M		RESIDUAL SOIL
			1		BH307-3 ES 1.00-1.10 m 1.00 m PID = 69 ppm						-	
		▽		1.80				-	SANDSTONE: medium grained, pale yellow/pink, extremely weathered. No odour.			ROCK
AD/T	-		2									
					BH307-4 ES 2.20-2.30 m 2.20 m PID = 61 ppm					W		
			3								-	
			4	4.20	BH307-5 ES 4.00-4.10 m 4.00 m PID = 50 ppm				Hole Terminated at 4.20 m Target depth reached.			
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH308/MW3

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID / Static Water Level
DT			0					-	FILL: Bitumen 50mm.	-	-	MW3
AD/T	-	GWNE			BH308-1 ES 0.05-0.10 m 0.05 m PID = 71 ppm			-	FILL: Silty GRAVEL, SAND, CLAY, fine to medium grained gravel including crushed sandstone/ironstone, fine to medium grained sand, grey to grey/brown/orange, tract of brick and concrete fragment. No odour.			Gatic Cover Concrete 50mm UPVC Cuttings
			1		BH308-2 ES 0.80-0.90 m 0.80 m PID = 78 ppm					M	-	
					BH308-3 ES 1.50-1.60 m 1.50 m PID = 56 ppm							Bentonite
				1.70				-	SANDSTONE: medium grained, pale grey/orange/red, extremely weathered. No odour.			
			2									
					BH308-4 ES 2.40-2.50 m 2.40 m PID = 42 ppm							
			3							D - M	-	50mm slotted UPVC (screen) Sand
			4		BH308-5 ES 4.00-4.10 m 4.00 m PID = 78 ppm							
				4.60					Hole Terminated at 4.60 m Refusal in rock.			
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

BOREHOLE: BH309

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
DT			0					-	FILL: Bitumen 50mm.	-	-	FILL
AD/T	-	GWNE	1		BH309-1 ES 0.05-0.10 m 0.05 m PID = 82 ppm			-	FILL: Silty GRAVEL, SAND, CLAY, fine to medium grained gravel including crushed sandstone/ironstone, fine to medium grained sand, grey to grey/brown/orange, tract of brick and concrete fragment. No odour.			
					BH309-2 ES 0.70-0.80 m 0.70 m PID = 51 ppm					M	-	
			2		BH309-3 ES 1.30-1.40 m 1.30 m PID = 52 ppm							
				2.20				-	SANDSTONE: pale grey/red, extremely weathered. No odour.			ROCK
			3		BH309-4 ES 2.50-2.60 m 2.50 m PID = 63 ppm					D	-	
			4	4.20	BH309-5 ES 4.00-4.10 m 4.00-4.10 m PID = 74.1 ppm				Hole Terminated at 4.20 m Target depth reached.			
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH310

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	6/6/14
Position	Refer to Figure 2			Date Completed	6/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description				
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
DT			0	0.20				-	CONCRETE: 200mm.	-	-	CONCRETE HARDSTAND
AD/T	-	GWNE		0.40	BH310-1 ES 0.20-0.30 m 0.20 m PID = 47 ppm BH310-2 ES 0.40-0.50 m 0.40 m PID = 66 ppm BH310-3 ES 0.80-0.90 m 0.80 m PID = 58 ppm			-	FILL: Silty SAND and GRAVEL, fine to medium grained sand, fine to medium grained gravel, brown to brown/grey, trace of concrete fragments. No odour.	W	-	FILL
								-	SANDSTONE: medium grained, grey/orange/red, extremely weathered. No odour.	M	-	ROCK
			1	1.00					Hole Terminated at 1.00 m Refusal in rock.			
			2									
			3									
			4									
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH311/MW4/ASS311

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	10/6/14
Position	Refer to Figure 2			Date Completed	10/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS ID / Static Water Level
DT			0	0.19				-	CONCRETE: 190mm.		-	MW4
								-	Void.	-	-	50mm UPVC
			1	1.00	BH311-1 ES 1.00-1.10 m 1.00 m PID = 122 ppm			-	FILL: Silty SAND and GRAVEL, fine to medium grained sand, fine to medium grained gravel including crushed sandstone/ironstone, brown to brown/grey, trace of brick/concrete fragment, rootlet. No odour.	M	-	Bentonite
AD/T	-	▽		1.60	AS311-1 ES 1.40-1.50 m BH311-2 ES 1.50-1.60 m 1.50 m PID = 60 ppm			-	SANDSTONE: medium grained, grey/orange/yellow, extremely weathered. No odour.			50mm slotted UPVC (screen)
			2		BH311-3/AS311-2 ES 1.90-2.00 m 1.90 m PID = 46 ppm							
					BH311-4/AS311-3 ES 2.40-2.50 m 2.40 m PID = 84 ppm					W	-	Sand
			3	3.60	AS311-4 ES 3.40-3.50 m BH311-5 ES 3.50-3.60 m 3.50 m PID = 73 ppm				Hole Terminated at 3.60 m Refusal in rock.			
			4									
			5									
			6									
			7									

Concrete cover

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH312

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment		
Location	20 Waterview Street, Putney, NSW		
Position	Refer to Figure 2		
Job No.	E222215	Contractor	
Client	Lilac Pty Ltd	Drill Rig	
		Inclination	-90°

Sheet	1 OF 1
Date Started	10/6/14
Date Completed	10/6/14
Logged AB	Date:
Checked	Date:

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
HA	-	GWNE	0					-	Timber floor decking.	-	-	
								-	Void.			
				0.85								
			1		BH312-1 ES 0.90-1.00 m 0.90 m PID = 86 ppm			-	FILL: Silty SAND and GRAVEL, fine to medium grained sand, fine to medium grained gravel including crushed sandstone/ironstone, brown to brown/grey, trace of brick/concrete fragment, rootlet. No odour.	M - W	-	FILL
				1.40								
				1.60	BH312-2 ES 1.40-1.50 m 1.40 m PID = 126 ppm			-	SANDSTONE: medium grained, orange/yellow, extremely weathered. No odour.		-	ROCK
			2						Hole Terminated at 1.60 m Target depth reached.			
			3									
			4									
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

BOREHOLE: BH313

Project	Environmental Site Assessment		
Location	20 Waterview Street, Putney, NSW	Sheet	1 OF 1
Position	Refer to Figure 2	Date Started	10/6/14
Job No.	E222215	Date Completed	10/6/14
Client	Lilac Pty Ltd	Logged AB	Date:
Contractor		Checked	Date:
Drill Rig			
Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	STRUCTURE AND ADDITIONAL OBSERVATIONS
			0					-	Timber floor decking.		-	
								-	Void.	-	-	
				0.83								
HA	-	GWNE	1		BH313-1 ES 0.80-0.90 m 0.80 m PID = 186 ppm			-	FILL: Silty SAND and GRAVEL, fine to medium grained sand, fine to medium grained gravel including crushed sandstone/ironstone, brown to brown/grey. No odour.	M	-	FILL
					BH313-2 ES 1.40-1.50 m 1.40 m PID = 150.1 ppm							
				1.70				-	SANDSTONE: medium grained, orange/yellow, extremely weathered. No odour.		-	ROCK
				2.00	BH313-3 ES 1.80-1.90 m 1.80 m PID = 126.6 ppm				Hole Terminated at 2.00 m Target depth reached.			
			2									
			3									
			4									
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

BOREHOLE: BH314/MW5/ASS314

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

Project	Environmental Site Assessment			Sheet	1 OF 1
Location	20 Waterview Street, Putney, NSW			Date Started	10/6/14
Position	Refer to Figure 2			Date Completed	10/6/14
Job No.	E222215	Contractor	Geohart	Logged AB	Date:
Client	Lilac Pty Ltd	Drill Rig	Truck mounted	Checked	Date:
		Inclination	-90°		

Drilling					Sampling		Field Material Description					
METHOD	PENETRATION RESISTANCE	WATER	DEPTH (metres)	DEPTH RL	SAMPLE OR FIELD TEST	RECOVERED	GRAPHIC LOG	USCS SYMBOL	SOIL/ROCK MATERIAL DESCRIPTION	MOISTURE CONDITION	CONSISTENCY DENSITY	PIEZOMETER DETAILS
AD/T	-	▽	0		BH314-1 ES 0.10-0.20 m 0.10 m PID = 278 ppm			-	FILL: crushed SANDSTONE, grey/orange/red, with some medium grained gravel and trace of rootlet. No odour.		-	ID MW5 Static Water Level; MW5; Concrete; Cuttings; 50mm UPVC; Bentonite
			1		AS314-1 ES 0.90-1.00 m BH314-2 ES 1.00-1.10 m 1.00 m PID = 119 ppm							
				1.20				SM	Silty SAND: fine to medium grained, grey. No odour.			
					BH314-3/AS314-2 ES 1.40-1.50 m 1.40 m PID = 236 ppm					M - W		
			2		AS314-3 ES 1.90-2.00 m BH314-4 ES 2.10-2.20 m 2.10 m PID = 175 ppm AS314-4 ES 2.40-2.50 m						-	Sand
			3		AS314-5 ES 2.90-3.00 m							50mm slotted UPVC (screen)
					AS314-6 ES 3.40-3.50 m							
				3.70				-	SANDSTONE: medium grained, grey, extremely weathered. No odour.	W	-	
			4	4.20	BH314-5 ES 4.00-4.10 m 4.00 m PID = 123 ppm				Hole Terminated at 4.20 m Refusal in rock.			
			5									
			6									
			7									

This borehole log should be read in conjunction with Environmental Investigations Australia's accompanying standard notes.

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

APPENDIX C

SAMPLE RECEIPT ADVICE
&
CHAIN-OF-CUSTODY CERTIFICATES

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

Environmental Investigations
Suite 6.01, 55 Miller Street
Pyrmont NSW 2009

ph: 9516 0722
Fax: 9518 5088

Attention: Anthony Barkway

Sample log in details:

Your reference:	**E22215, Putney**
Envirolab Reference:	**111355**
Date received:	11/06/2014
Date results expected to be reported:	**17/06/14**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	1 Soil
Turnaround time requested:	Standard
Temperature on receipt (°C)	12.7
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

SAMPLE RECEIPT ADVICE

SE129279

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 - 20 Waterview St - Putney**
Order Number	**E22215**
Samples	1

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 2/7/2014
Report Due	Wed 9/7/2014
SGS Reference	**SE129279**

SUBMISSION DETAILS

This is to confirm that 1 sample was received on Wednesday 2/7/2014. Results are expected to be ready by Wednesday 9/7/2014. Please quote SGS reference SE129279 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	1 Water	Type of documentation received	COC
Date documentation received	2/7/2014	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

SAMPLE RECEIPT ADVICE

SE129279

CLIENT DETAILS

Client Environmental Investigations

Project E22215 - 20 Waterview St - Putney

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Water	OP Pesticides in Water	PAH (Polynuclear Aromatic Hydrocarbons) in	PCBs in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	GW4-1	28	13	22	11	7	9	79	8

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

SAMPLE RECEIPT ADVICE

SE129279

CLIENT DETAILS

Client Environmental Investigations

Project E22215 - 20 Waterview St - Putney

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water
001	GW4-1	1

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

Sheet 1 of 1

Site: 20 Waterview St. Putney NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	Sample Matrix: WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	Ammonia	Phenols
GW4-1	1	1xS | 2x 1xP VC	2.7.14	1200	✓				✓		✓		✓	✓			✓					

RECEIVED
02 JUL 2014
SB129279

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day ☐ 24 Hours
- ☐ 48 Hours ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

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

Sampler Name: Anthony Barkway (Print) A Barkway (Signature) Date: 2.7.14

Sampler's Comments:

Received by: (print & Signature) Date: 02/07 Time: 3.15

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

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

SGS

Job: SE129279

Matrix	250 JAR	125 JAR	BAG		Diss metals	1L UP P	500 UP P	250 ZnAcetate P	250 / 500 NaOH BP	125 / 250 UP P	125 / 250 Metal Total*	125 / 250 Metal Filtered*	125 HCl P	1L UP AG	500 / 1L H_2SO_4 AG	125 / 250 H_2SO_4 P	100 / 200 UP AG	40 NaThio GV	250 UP OPAQUE P	500 NaThio STERILE P	200 NaThio STERILE P						Storage Location	Bottles Supplied By	Comment	Cooling Method
																													order
1	W				1									1				2								W015	Sol	Full	Temp
																													3.7
																													Good Order
																													(Y) / N
																													Clearly Labelled
																													(Y) / N
																													Correct Pres.
																													(Y) / N
																													No Head-space
																													(Y) / N / NA
																													Sufficient Vol
																													(Y) / N
																													Doc Date
																													02/09
																													Doc Type
																													COC
																													Complete Docs
																													(Y) / N
																													Requested TAT

SAMPLE RECEIPT ADVICE

SE129041

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 - 20 Waterview St - Putney**
Order Number	**E22215**
Samples	7

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 25/6/2014
Report Due	Wed 2/7/2014
SGS Reference	**SE129041**

SUBMISSION DETAILS

This is to confirm that 7 samples were received on Wednesday 25/6/2014. Results are expected to be ready by Wednesday 2/7/2014. Please quote SGS reference SE129041 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	7 Waters	Type of documentation received	COC
Date documentation received	25/6/2014	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

Volatile results may be compromised (R100) for BTEX and TPH (C6-C10) analysis as a sub-sample will be used from the 1L amber bottle received. It is recommended that 2 x 40mL HCL or Sodium Thiosulphate preserved vials are supplied.

SAMPLE RECEIPT ADVICE

SE129041

CLIENT DETAILS

Client Environmental Investigations

Project E22215 - 20 Waterview St - Putney

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Water	OP Pesticides in Water	PAH (Polynuclear Aromatic Hydrocarbons) in	PCBs in Water	Total Phenolics in Water	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	GW1-1	28	13	22	11	-	9	79	8
002	GW2-1	-	-	22	-	1	9	79	8
003	GW3-1	-	-	22	-	1	9	79	8
004	GW5-1	-	-	22	-	-	9	79	8
005	GWB100	-	-	22	-	-	9	12	8
006	R100	-	-	-	-	-	9	12	8
007	TB	-	-	-	-	-	-	12	8

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

SAMPLE RECEIPT ADVICE

SE129041

CLIENT DETAILS

Client Environmental Investigations

Project E22215 - 20 Waterview St - Putney

SUMMARY OF ANALYSIS

No.	Sample ID	Ammonia Nitrogen by Discrete Analyser	Mercury (dissolved) in Water	Trace Metals (Dissolved) in Water by ICPMS
001	GW1-1	1	1	7
002	GW2-1	1	1	7
003	GW3-1	1	1	7
004	GW5-1	1	1	7
005	GWB100	-	1	7
006	R100	-	1	7

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

Sheet 1 of 1

Site: 20 Waterview Str. Putney NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	Ammonia	Phenols.
GW1-1	1	1xS 1xP 2x VC	23.6.14	1100	✓				✓		✓		✓	✓			✓				✓	
GW2-1	2	↓	↓	↓	✓				✓		✓		✓				✓				✓	✓
GW3-1	3				✓				✓		✓		✓				✓				✓	✓
GW5-1	4				✓				✓		✓		✓				✓				✓	
GWB100	5				✓				✓		✓		✓									
R100	6	1xS; 1xP			✓				✓		✓											
TB	7							✓			✓											

RECEIVED
25 JUN 2014
SE129041

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day ☐ 24 Hours
- ☐ 48 Hours ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkway (Print) A Barkway (Signature) Date: 24.06.14

Sampler's Comments: Note TB analyse for TRH [C_6 - C_{10}] only.

Received by: (print & Signature) Date: 25/06 Time: 3:~

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

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

SGS

Job: SB129041

	Matrix	250 JAR	125 JAR	BAG		Plasmd metal	1L UP P	500 UP P	250 ZnAcetate P	250 / 500 NaOH BP	125 / 250 UP P	125 / 250 Metal Total*	125 / 250 Metal Filtered*	125 HCl P	1L UP AG	500 / 1L H_2SO_4 AG	125 / 250 H_2SO_4 P	100 / 200 UP AG	40 NaThio GV	250 UP OPAQUE P	500 NaThio STERILE P	200 NaThio STERILE P	Glycol Vial				Storage Location	Bottles Supplied By	Comment	Cooling Method
																														Cooler
1-5	W					1									1				2								W194-195	SCS	Fuel	Temp
6						1									1												"	"	-	3.7
7																							1				"	"	-	Good Order
																														(Y) / N
																														Clearly Labelled
																														(Y) / N
																														Correct Pres.
																														(Y) / N
																														No Head-space
																														(Y) / N / NA
																														Sufficient Vol
																														(Y) / N
																														Doc Date
																														25/05
																														Doc Type
																														COC
																														Complete Docs
																														Y / N
																														Requested TAT

Uncontrolled when printed

SAMPLE RECEIPT ADVICE

SE129036

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 - 20 Waterview St, Putney NSW**
Order Number	**E22215**
Samples	4

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 25/6/2014
Report Due	Fri 4/7/2014
SGS Reference	**SE129036**

SUBMISSION DETAILS

This is to confirm that 4 samples were received on Wednesday 25/6/2014. Results are expected to be ready by Friday 4/7/2014. Please quote SGS reference SE129036 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	4 Soils	Type of documentation received	COC
Date documentation received	25/6/2014	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

Organotins subcontracted to ADVANCED ANALYTICAL AUSTRALIA, Riverside Corporate Park, 11 Julius Avenue, North Ryde NSW 2113, NATA Accreditation Number: 15101.

SAMPLE RECEIPT ADVICE

SE129036

CLIENT DETAILS

Client Environmental Investigations

Project E22215 - 20 Waterview St, Putney NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	Moisture Content	Organometallics in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in	Total Recoverable Metals in Soil by ICPOES from
001	SS1	1	1	3	25	7
002	SS2	1	1	3	25	7
003	SS3	1	1	3	25	7
004	SS4	1	1	3	25	7

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

Sheet 1 of 1

Site: 20 waterview Str. Rothey NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	Organotins
SS1	1	J	23.06.14	1100				✓	✓				✓								✓
SS2	2	↓	↓	↓				✓	✓				✓								✓
SS3	3	↓	↓	↓				✓	✓				✓								✓
SS4	4	↓	↓	↓				✓	✓				✓								✓

RECEIVED
25 JUN 2014
SB129036

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:
[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc
[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium
[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:
☐ Same Day ☐ 24 Hours
☐ 48 Hours ☐ 72 Hours
☒ Standard
☐ Other _____

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

Sampler Name: Anthony Borkowski (Print) A Borkowski (Signature) Date: 25.06.14

Sampler's Comments:

Received by: (print & Signature) Date: 25/06 Time: 3.~

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

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

SGS

Job: SE129036

	Matrix	250 JAR	125 JAR	BAG			1L UP P	500 UP P	250 ZnAcetate P	250 / 500 NaOH BP	125 / 250 UP P	125 / 250 Metal Total*	125 / 250 Metal Filtered*	125 HCl P	1L UP AG	500 / 1L H_2SO_4 AG	125 / 250 H_2SO_4 P	100 / 200 UP AG	40 NaThio GV	250 UP OPAQUE P	500 NaThio STERILE P	200 NaThio STERILE P						Storage Location	Bottles Supplied By	Comment	Cooling Method
1-4	Soil	1	-																									S409	SGS	Full	Cooler
																														Temp
																														3-7
																														Good Order
																														(Y) / N
																														Clearly Labelled
																														(Y) / N
																														Correct Pres.
																														(Y) / N
																														No Head-space
																														(Y) N / NA
																														Sufficient Vol
																														(Y) / N
																														Doc Date
																														25/06
																														Doc Type
																														COC
																														Complete Docs
																														(Y) / N
																														Requested TAT

Uncontrolled when printed

SAMPLE RECEIPT ADVICE

SE128733

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 – 20 Waterview Street, Putney NSW**
Order Number	**E22215**
Samples	35

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 11/6/2014
Report Due	Mon 23/6/2014
SGS Reference	**SE128733**

SUBMISSION DETAILS

This is to confirm that 35 samples were received on Wednesday 11/6/2014. Results are expected to be ready by Monday 23/6/2014. Please quote SGS reference SE128733 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	33 Soils, 2 Waters	Type of documentation received	COC
Date documentation received	13/06/2014@04:57pm	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.6°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

Instructions received at SGS on 13/06/2014@04:57pm. Samples were not registered until the next working day.
Trip Spike can only be analysed for BTEX.
Extra sample received, not listed on the COC by the client, labelled as "BH309-5", will be placed on hold, unless otherwise requested by client.
Clay Content - Subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146.

Volatile results may be compromised for BTEX and TPH (C6-C10) analysis on samples "R300" and "R301" as a sub-sample will be used from the 1 litre amber bottle received. It is recommended that 2 x 40mL HCL or Sodium Thiosulphate preserved vials are supplied.
32 soil samples, which were not marked for analyses on the COC, have been placed on hold. These samples will not be processed.

SAMPLE RECEIPT ADVICE

SE128733

CLIENT DETAILS

Client Environmental Investigations

Project E22215 – 20 Waterview Street, Putney NSW

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in	PCBs in Soil	Total Phenolics in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	BH301-1	28	13	25	11	-	9	12	8
002	BH301-2	-	-	-	-	-	-	79	-
003	BH301-5	-	-	-	-	-	9	79	8
004	BH302-1	28	13	25	11	-	9	12	8
006	BH303-1	28	13	25	11	-	9	12	8
008	BH304-1	28	13	25	11	-	9	12	8
009	BH304-2	-	-	25	-	-	9	12	8
010	BH305-1	28	13	-	11	-	-	-	-
012	BH306-1	28	13	-	11	-	9	12	8
013	BH306-4	-	-	-	-	1	9	12	8
014	BH306-6	-	-	-	-	-	9	79	8
015	BH307-1	28	13	25	11	-	9	79	8
016	BH307-2	-	-	25	-	-	9	79	8
017	BH307-3	-	-	-	-	-	9	12	8
018	BH308-1	28	13	25	11	1	9	12	8
019	BH308-3	-	-	25	-	1	9	79	8
020	BH309-1	28	13	25	11	1	9	12	8
021	BH309-3	-	-	25	-	-	9	12	8
022	BH310-1	-	-	25	-	-	9	12	8
023	BH311-1	28	13	25	11	-	9	79	8
024	BH311-2	28	13	25	11	-	-	-	-

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

SAMPLE RECEIPT ADVICE

SE128733

CLIENT DETAILS

Client Environmental Investigations

Project E22215 – 20 Waterview Street, Putney NSW

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in	PCBs in Soil	Total Phenolics in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
025	BH312-1	28	13	25	11	-	9	12	8
026	BH313-1	28	13	25	11	-	9	12	8
027	BH313-3	-	-	25	-	-	9	12	8
028	BH314-1	-	-	25	-	1	9	12	8
029	BH314-3	-	-	25	-	-	9	12	8
030	Trip Blank	-	-	-	-	-	-	12	8
031	Trip Spike	-	-	-	-	-	-	12	-
034	B300	-	-	-	-	-	9	12	8

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

SAMPLE RECEIPT ADVICE

SE128733

CLIENT DETAILS

Client Environmental Investigations

Project E22215 – 20 Waterview Street, Putney NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Total Recoverable Metals in Soil by ICPOES from
001	BH301-1	-	1	1	7
002	BH301-2	-	-	1	-
003	BH301-5	-	-	1	-
004	BH302-1	2	1	1	7
005	BH302-2	-	1	1	7
006	BH303-1	-	1	1	7
007	BH303-2	-	1	1	7
008	BH304-1	2	1	1	7
009	BH304-2	-	-	1	-
010	BH305-1	2	1	1	7
011	BH305-3	-	1	1	7
012	BH306-1	2	1	1	7
013	BH306-4	-	-	1	-
014	BH306-6	-	-	1	-
015	BH307-1	2	1	1	7
016	BH307-2	-	-	1	-
017	BH307-3	-	1	1	7
018	BH308-1	2	1	1	7
019	BH308-3	-	-	1	-
020	BH309-1	-	1	1	7
021	BH309-3	-	-	1	-
022	BH310-1	-	1	1	7
023	BH311-1	2	1	1	7
024	BH311-2	-	1	1	7

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

SAMPLE RECEIPT ADVICE

SE128733

CLIENT DETAILS

Client Environmental Investigations

Project E22215 – 20 Waterview Street, Putney NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Clay and Fine Silt in Soil/Aggregate	Exchangeable Cations and Cation Exchange Capacity	Fibre Identification in soil	Mercury in Soil	Moisture Content	pH in soil (1:5)	Total Recoverable Metals in Soil by ICPOES from	VOCs in Water
025	BH312-1	-	-	2	1	1	-	7	-
026	BH313-1	-	-	2	1	1	-	7	-
027	BH313-3	-	-	-	-	1	-	-	-
028	BH314-1	-	-	2	1	1	-	7	-
029	BH314-3	-	-	-	1	1	-	7	-
030	Trip Blank	-	-	-	-	1	-	-	-
032	R300	-	-	-	-	-	-	-	12
033	R301	-	-	-	-	-	-	-	12
034	B300	-	-	-	1	1	-	7	-
035	EIL-1	1	13	-	1	1	1	7	-

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

SAMPLE RECEIPT ADVICE

SE128733

CLIENT DETAILS

Client Environmental Investigations

Project E22215 – 20 Waterview Street, Putney NSW

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Trace Metals (Dissolved) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	Volatile Petroleum Hydrocarbons in Water
032	R300	1	7	9	8
033	R301	1	7	9	8

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

Sheet 1 of 6

Site: 20 Waterview Street Putney, NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)		
BH301-1	1	J, ZLB	6.6.14	1100		✓			✓		✓		✓	✓								
BH301-2	2	J				✓											✓					
BH301-3		↓				✓																
BH301-4						✓																
BH301-5	3	↓				✓					✓						✓					
BH302-1	4	J, ZLB				✓			✓		✓		✓	✓		✓						
BH302-2	5	J				✓			✓													
BH302-3		↓				✓																
BH302-4		↓				✓																
BH303-1	6	J; ZLB				✓			✓		✓		✓	✓								
BH303-2	7	J				✓			✓													
BH303-3		↓				✓																
BH303-4		↓	↓	↓		✓																

RECEIVED
11 JUN 2014
SE128733

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkway (Print) A Barkway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Date: 11/06 Time: 2.00

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

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

Sheet 2 of 6

Site: 20 Waterview Str. Putney, NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	Sample Matrix: WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	Phenols
BH304-1	8	J; ZLB	10.6.14	11:00		✓			✓		✓		✓	✓		✓					
BH304-2	9	J	↓	↓		✓					✓		✓								
BH304-3		↓				✓															
BH304-4						✓															
BH304-5						✓															
BH305-1	10	J; ZLB	6.6.14			✓			✓					✓		✓					
BH305-2		J				✓															
BH305-3	11					✓			✓												
BH305-4		↓				✓															
BH306-1	12	J; ZLB				✓			✓		✓			✓		✓					
BH306-2		J				✓															
BH306-3		↓				✓															
BH306-4	13	↓	↓	↓		✓					✓										✓

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day ☐ 24 Hours
- ☐ 48 Hours ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkeway (Print) Barkeway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Date: 16/06 Time: 2.00

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

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

Sheet 3 of 6

Site: 20 Waterview Str. Putney NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	Sample Matrix: WATER	SOIL	COMPOSITE	OTHER	Analysis: Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	Phenols [C]
BH306-5		J	6.6.14	1100		✓															
BH306-6	14	↓				✓					✓						✓				
BH306-7		↓				✓															
BH307-1	15	J;ZLB				✓			✓		✓		✓	✓		✓	✓				
BH307-2	16	J				✓					✓		✓				✓				
BH307-3	17	↓				✓			✓		✓										
BH307-4		↓				✓															
BH307-5		↓				✓															
BH308-1	18	J;ZLB				✓			✓		✓		✓	✓		✓					✓
BH308-2		J				✓															
BH308-3	19	↓				✓					✓		✓				✓				✓
BH308-4		↓				✓															
BH308-5		↓	↓	↓		✓															

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day ☐ 24 Hours
- ☐ 48 Hours ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkway (Print) A Barkway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Date: 11/06 Time: 2:00

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

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

Sheet 4 of 6

Site: 20 Waterview Str. Putney NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	Sample Matrix: WATER	SOIL	COMPOSITE	OTHER	Analysis: Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	Phenols
BH309-1	20	J, ZLB	6.6.14	1100		✓			✓		✓		✓	✓							✓
BH309-2		J				✓															
BH309-3	21					✓					✓		✓								
BH309-4		↓	↓	↓		✓															
BH310-1	22	J; ZLB	10.6.14	1100		✓			✓		✓		✓								
BH310-2		J				✓															
BH310-3		↓				✓															
BH311-1	23	J; ZLB				✓			✓		✓		✓	✓		✓	✓				
BH311-2	24	J				✓			✓				✓	✓							
BH311-3						✓															
BH311-4						✓															
BH311-5		↓				✓															
BH312-1	25	J; ZLB	↓	↓		✓			✓		✓		✓	✓		✓					

Container Type:
J= solvent washed, acid rinsed, Teflon sealed, glass jar; S= solvent washed, acid rinsed glass bottle; ... Teflon Septum; ZLB = Zip-Lock Bag

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

Sampler Name: Anthony Barkway (Print) Barkway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Date: 11/06 Time: 2.00

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day ☐ 24 Hours
- ☐ 48 Hours ☐ 72 Hours
- ☑ Standard
- ☐ Other _____

Sheet 5 of 6

Site: 20 Waterview Str. Putney NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	Sample Matrix: WATER	SOIL	COMPOSITE	OTHER	Analysis: Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	TRH C_6 - C_9 / BTEX	Phenols
BH312-2		J	10.6.14	1100		✓																
BH313-1	26	J, ZLB				✓			✓		✓		✓	✓		✓						
BH313-2		J				✓																
BH313-3	27	↓				✓					✓		✓									
BH314-1	28	J, ZLB				✓			✓		✓		✓			✓						✓
BH314-2		J				✓																
BH314-3	29	↓				✓			✓		✓		✓									
BH314-4		↓				✓																
BH314-5		↓				✓																
trip blank	30	J						✓													✓	
trip spike	31	VC	↓	↓				✓													✓	
R300	32		6.6.14	1200	✓				✓		✓											
R301	33		10.6.14	1200	✓				✓		✓											

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc
[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium
[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day ☐ 24 Hours
- ☐ 48 Hours ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkway (Print) Barkway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Date: 11/06 Time: 2.2

Container Type:
J= solvent washed, acid rinsed, Teflon sealed, glass jar; S= solvent washed, acid rinsed glass bottle; [illegible] plastic bottle; VC= glass vial, Teflon Septum; ZLB = Zip-Lock Bag

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

Sheet 6 of 6

Site: 20 Waterview Str. Putney NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	CEC & pH	Clay Content
B300	34	J	10.6.14	1100		✓			✓		✓											
EIL-1	35	↓	↓	↓		✓			✓												✓	✓

Sample Matrix / Analysis

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkway (Print) A Barkway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Date: 11/06 Time: 2:00

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

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

AU.SampleReceipt.Sydney (Sydney)

From: AU.SampleReceipt.Sydney (Sydney)
Sent: Monday, 16 June 2014 10:10 AM
To: Anthony Barkway - Environmental Investigations
Subject: RE: Please see the COC for the Job E22215 - Putney

Dear Anthony,

Extra sample received BH309-5. Do you want it analysed?

Kind Regards,

Emily Yin
Environmental Services
Sample Administration Officer

Phone: +61 (0)2 8594 0400
Fax: +61 (0)2 8594 0499

From: Anthony Barkway - Environmental Investigations [mailto:anthony.barkway@eiaustralia.com.au]
Sent: Friday, 13 June 2014 4:57 PM
To: Crawford, Huong (Sydney); Blackman, Daniel (Sydney); AU.SampleReceipt.Sydney (Sydney)
Subject: Please see the COC for the Job E22215 - Putney

Dear SGS Team,

Please see the COC for the above job attached

Apologies for the delay

Kind Regards,

Anthony Barkway | Envirnomental Engineer

Environmental Investigations Australia Pty Ltd

Unit 6.01, 55 Miller Street Pyrmont NSW 2009

M 0410 688 683 | T 02 9516 0722 | F 02 9518 5088

W www.eiaustralia.com.au <http://www.eiaustralia.com.au> E anthony.barkway@eiaustralia.com.au <mailto:nik.kontos@eiaustralia.com.au>

C

Attachments:

image001.png (24 KB)

img-613164707-0001.pdf (2.6 MB)

SGS

Job: SE128733

	Matrix	250 JAR	125 JAR	BAG			1L UP P	500 UP P	250 ZnAcetate P	250 / 500 NaOH BP	125 / 250 UP P	125 / 250 Metal Total*	125 / 250 Metal Filtered*	125 HCl P	500 UP AG	500 / 1L H_2SO_4 AG	125 / 250 H_2SO_4 P	100 / 200 UP AG	40 ~~Na2S2O3~~ GV	250 UP OPAQUE P	500 NaThio STERILE P	200 NaThio STERILE P	Plastic metal 3				Storage Location,	Bottles Supplied By	Comment	Cooling Method
1-29, 34, 35	Soil	1																								S366-369	SGS	Full	Temp
30	"		1																							"	"	-	3.6
31	"																		1							"	"	-	Good Order
32-33	water														1							1				W149	-	-	(Y) N
1, 4, 6, 8, 10, 12, 15, 18, 20, 22, 23, 25, 26, 28				1																						A33	"	100g	Clearly Labelled
																													(Y) / N
																													Correct Pres.
																													(Y) / N
									32 Soil on hold																				No Head-space
																													(Y) N / NA
									1 Extra Sample Received															BH309-5					Sufficient Vol
																													(Y) / N
																													Doc Date
																													11/06
																													Doc Type
																													COC
																													Complete Docs
																													(Y) / N
																													Requested TAT

SAMPLE RECEIPT ADVICE

SE128633

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 - 20 Waterview St, Putney NSW**
Order Number	**E22215**
Samples	8

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 11/6/2014
Report Due	Wed 18/6/2014
SGS Reference	**SE128633**

SUBMISSION DETAILS

This is to confirm that 8 samples were received on Wednesday 11/6/2014. Results are expected to be ready by Wednesday 18/6/2014. Please quote SGS reference SE128633 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	8 Soils	Type of documentation received	COC
Date documentation received	11/6/2014	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	3.7°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice Bricks	Samples clearly labelled	Yes
Complete documentation received	Yes		

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

SPOCAS - Subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146.

SAMPLE RECEIPT ADVICE

SE128633

CLIENT DETAILS

Client Environmental Investigations

Project E22215 - 20 Waterview St, Putney NSW

SUMMARY OF ANALYSIS

No.	Sample ID	HCl Extractable S, Ca and Mg in Soil ICP OES	SPOCAS Net Acidity Calculations	TAA (Titratable Actual Acidity)	TPA (Titratable Peroxide Acidity)
001	AS306-2	3	6	7	21
002	AS306-3	3	6	7	21
003	AS306-4	3	6	7	21
004	AS306-5	3	6	7	21
005	AS311-1	3	6	7	21
006	AS314-2	3	6	7	21
007	AS314-4	3	6	7	21
008	AS314-6	3	6	7	21

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
The numbers shown in the table indicate the number of results requested in each package.
Please indicate as soon as possible should your request differ from these details.
Testing as per this table shall commence immediately unless the client intervenes with a correction.

Sheet 1 of 2

Site: 20 Waterview Str. Putney NSW

Project ID: E22215

Laboratory: **SGS Australia**
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	Sample Matrix: WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)		
AS306-1		J	6.6.14	1600		✓																
AS306-2	1	↓	↓	↓		✓												✓				
AS306-3	2					✓												✓				
AS306-4	3					✓												✓				
AS306-5	4					✓												✓				
AS306-6			↓	↓		✓																
AS311-1	5		10.6.14	1000		✓												✓				
AS311-2			↓	↓		✓																
AS311-3						✓																
AS311-4						✓																
AS314-1						✓																
AS314-2	6					✓												✓				
AS314-3		↓	↓	↓		✓																

RECEIVED
11 JUN 2014
SE128633

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day ☐ 24 Hours
- ☐ 48 Hours ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkway (Print) A Barkway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Date: 11/06 Time: 2.00

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

IMPORTANT:

PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

Sheet 2 of 2

Site: 20 Waterview Str - Putney NSW

Project ID: E22215

Laboratory: SGS Australia
Unit 16, 33 Maddox Street,
ALEXANDRIA NSW 2015
P: 02 8594 0400 F: 02 8594 0499

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	Heavy Metals [B]	TRH / BTEX	TRH + Silica Gel Cleanup	PAHs	OCPs / PCBs / OPPs	TRH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)		
AS314-4	7	J	10.6.14	1100		✓												✓				
AS314-5		↓	↓	↓		✓																
AS314-6	8	↓	↓	↓		✓												✓				

Sample Matrix / Analysis

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:

[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

[B] Antimony, Barium, Beryllium, Cobalt, Manganese, Tin, Vanadium

[C] Arsenic, Cadmium, Chromium, Lead, Mercury, Nickel

Laboratory Turnaround:

- ☐ Same Day ☐ 24 Hours
- ☐ 48 Hours ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Backway (Print) Backway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Date: 11/06 Time: 2.00

Container Type:
J= solvent washed, acid rinsed,Teflon sealed, glass jar; S= solvent washed, acid rinsed glass bottle;

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

SGS

Job: SE128633

	Matrix	250 JAR	125 JAR	BAG			1L UP P	500 UP P	250 ZnAcetate P	250 / 500 NaOH BP	125 / 250 UP P	125 / 250 Metal Total*	125 / 250 Metal Filtered*	125 HCl P	1L UP AG	500 / 1L H_2SO_4 AG	125 / 250 H_2SO_4 P	100 / 200 UP AG	40 NaThio GV	250 UP OPAQUE P	500 NaThio STERILE P	200 NaThio STERILE P						Storage Location	Bottles Supplied By	Comment	Cooling Method
1-8	S	1							8 Soil on hold																			S354	Sas	Full	Cooler
																														Temp
																														3-7
																														Good Order
																														(Y) / N
																														Clearly Labelled
																														(Y) / N
																														Correct Pres.
																														(Y) / N
																														No Head-space
																														(Y) / N / NA
																														Sufficient Vol
																														(Y) / N
																														Doc Date
																														11/06
																														Doc Type
																														COC
																														Complete Docs
																														(Y) / N
																														Requested TAT

Sheet 1 of 1

Site: 20 Waterview Sts. Putney NSW

Project ID: E22215

Laboratory: **Envirolab Services**
12 Ashley Street
CHATSWOOD NSW 2067
P: 02 9910 6200

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	Sample Matrix: WATER	SOIL	COMPOSITE	OTHER	Heavy Metals [A]	TPH / BTEX	PAHs	OCPs / PCBs / OPPs	TPH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	Peroxid PH			
GWI100	1	1xS; 1xD | 2xVC	23.6.14	1100	✓				✓	✓	✓											

ENVIROLAB
Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 112170
Date Received: 26/6/14
Time Received: 1300
Received by: [illegible]
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:
[A] Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

Laboratory Turnaround:
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkway (Print) [signature] (Signature) Date: 25.06.14

Sampler's Comments:

Received by: (print & Signature) [illegible] Date: 26/6/14 Time: 13:00

Container Type:
J= solvent washed, acid rinsed,Teflon sealed, glass jar, S= solvent washed, acid rinsed glass bottle,
P= natural HDPE plastic bottle, VC= glass vial, Teflon Septum.

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

Sheet 1 of 1

Site: 20 waterview Str. Putney NSW

Project ID: E22215

Laboratory: **Envirolab Services**
12 Ashley Street
CHATSWOOD NSW 2067
P: 02 9910 6200

Sample ID	Laboratory ID	Container Type	Sampling Date:	Sampling Time:	WATER	SOIL	COMPOSITE	OTHER	Heavy Metals Δ	TPH / BTEX	PAHs	OCPs / PCBs / OPPs	TPH (C_{10} - C_{36}) only	Asbestos	VOCs	sPOCAs	pH (1:5)	EC (1:5)	Peroxid PH
I300		J	10.6.14	1100		✓			✓	✓									

Envirolab Service
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 111355
Date Received: 11/6/14
Time Received: 14:05
Received by:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

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

Comments:
Δ Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc

Laboratory Turnaround:
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☐ 72 Hours
- ☒ Standard
- ☐ Other _____

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

Sampler Name: Anthony Barkway (Print) A Barkway (Signature) Date: 10.6.14

Sampler's Comments:

Received by: (print & Signature) Kevin Date: 11/6/14 Time: 14:05

Container Type:
J= solvent washed, acid rinsed,Teflon sealed, glass jar, S= solvent washed, acid rinsed glass bottle,
P= natural HDPE plastic bottle, VC= glass vial, Teflon Septum.

IMPORTANT:
PLEASE E-MAIL LABORATORY RESULTS TO:
service@eiaustralia.com.au

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

SAMPLE RECEIPT ADVICE

Client:

Environmental Investigations
Suite 6.01, 55 Miller Street
Pyrmont NSW 2009

ph: 9516 0722
Fax: 9518 5088

Attention: Anthony Barkway

Sample log in details:

Your reference:	**E22215, Putney**
Envirolab Reference:	**112170**
Date received:	26/06/14
Date results expected to be reported:	**3/07/14**

Samples received in appropriate condition for analysis:	YES
No. of samples provided	1 Water
Turnaround time requested:	Standard
Temperature on receipt (°C)	16.1
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

If there is sufficient sample after testing, samples will be held for the following time frames from date of receipt of samples:
Water samples - 1 month
Soil and other solid samples - 2 months
Samples collected in canisters - 1 week. Canisters will then be cleaned.
All other samples are not retained after analysis
If you require samples to be retained for longer periods then retention fees will apply as per our pricelist.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst
ph: 02 9910 6200 fax: 02 9910 6201
email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Environmental Investigations Australia
Contamination | Remediation | Geotechnical

APPENDIX D

LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Anthony Barkway	Manager	Huong Crawford
Client	Environmental Investigations	Laboratory	SGS Alexandria Environmental
Address	Suite 6.01, 55 Miller Street NSW 2009	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	02 9516 0722	Telephone	+61 2 8594 0400
Facsimile	02 9516 0741	Facsimile	+61 2 8594 0499
Email	anthony.barkway@eiaustralia.com.au	Email	au.environmental.sydney@sgs.com
Project	**E22215 - 20 Waterview St - Putney**	SGS Reference	**SE129041 R0**
Order Number	**E22215**	Report Number	0000086169
Samples	7	Date Reported	02 Jul 2014
		Date Received	25 Jun 2014

COMMENTS

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

VOC - The Limit of Reporting (LOR) has been raised for Acetone due to interferences from the sample matrix.

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Huong Crawford
Production Manager

Jaimie Cheung
Metals Chemist

Ly Kim Ha
Organic Section Head

Sheila Lepasana
Senior Technician

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE129041.001 Water 23/6/14 11:00 GW1-1	SE129041.002 Water 23/6/14 11:00 GW2-1	SE129041.003 Water 23/6/14 11:00 GW3-1	SE129041.004 Water 23/6/14 11:00 GW5-1
VOCs in Water Method: AN433/AN434						
Fumigants						
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Halogenated Aliphatics						
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	<5	<5
Chloromethane	µg/L	5	<5	<5	<5	<5
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	<0.3	<0.3
Bromomethane	µg/L	10	<10	<10	<10	<10
Chloroethane	µg/L	5	<5	<5	<5	<5
Trichlorofluoromethane	µg/L	1	<1	<1	<1	<1
Iodomethane	µg/L	5	<5	<5	<5	<5
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Dichloromethane (Methylene chloride)	µg/L	5	<5	<5	<5	<5
Allyl chloride	µg/L	2	<2	<2	<2	<2
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Bromochloromethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Dibromomethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
cis-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE129041.001 Water 23/6/14 11:00 GW1-1	SE129041.002 Water 23/6/14 11:00 GW2-1	SE129041.003 Water 23/6/14 11:00 GW3-1	SE129041.004 Water 23/6/14 11:00 GW5-1
VOCs in Water Method: AN433/AN434 (continued)						
Halogenated Aromatics						
Chlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
4-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	<0.3	<0.3
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	**1.1**	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
n-propylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
tert-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
sec-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
n-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
Nitrogenous Compounds						
Acrylonitrile	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
2-nitropropane	µg/L	100	<100	<100	<100	<100

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE129041.001 Water 23/6/14 11:00 GW1-1	SE129041.002 Water 23/6/14 11:00 GW2-1	SE129041.003 Water 23/6/14 11:00 GW3-1	SE129041.004 Water 23/6/14 11:00 GW5-1
VOCs in Water Method: AN433/AN434 (continued)							
Oxygenated Compounds							
Acetone (2-propanone)	µg/L	10		<60↑	<10	<10	<10
MtBE (Methyl-tert-butyl ether)	µg/L	2		<2	<2	<2	<2
Vinyl acetate	µg/L	10		<10	<10	<10	<10
MEK (2-butanone)	µg/L	10		<10	<10	<10	<10
MIBK (4-methyl-2-pentanone)	µg/L	5		<5	<5	<5	<5
2-hexanone (MBK)	µg/L	5		<5	<5	<5	<5
Polycyclic VOCs							
Naphthalene	µg/L	0.5		<0.5	<0.5	<0.5	<0.5
Sulphonated Compounds							
Carbon disulfide	µg/L	2		<2	<2	<2	<2
Surrogates							
Dibromofluoromethane (Surrogate)	%	-		**114**	**118**	**120**	**114**
d4-1,2-dichloroethane (Surrogate)	%	-		**99**	**116**	**109**	**119**
d8-toluene (Surrogate)	%	-		**94**	**94**	**91**	**95**
Bromofluorobenzene (Surrogate)	%	-		**99**	**102**	**96**	**107**
Totals							
Total Xylenes	µg/L	1.5		<1.5	<1.5	<1.5	<1.5
Total BTEX	µg/L	3		<3	<3	<3	<3
Total VOC	µg/L	10		-	-	-	-
Trihalomethanes							
Chloroform (THM)	µg/L	0.5		<0.5	<0.5	<0.5	<0.5
Bromodichloromethane (THM)	µg/L	0.5		<0.5	<0.5	<0.5	<0.5
Dibromochloromethane (THM)	µg/L	0.5		<0.5	<0.5	<0.5	<0.5
Bromoform (THM)	µg/L	0.5		<0.5	<0.5	<0.5	<0.5

Parameter	Units	LOR	Sample Number: SE129041.001 Sample Matrix: Water Sample Date: 23/6/14 11:00 Sample Name: GW1-1	SE129041.002 Water 23/6/14 11:00 GW2-1	SE129041.003 Water 23/6/14 11:00 GW3-1	SE129041.004 Water 23/6/14 11:00 GW5-1
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410						
TRH C6-C10	µg/L	50	<50	<50	<50	<50
TRH C6-C9	µg/L	40	<40	<40	<40	<40
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**111**	**119**	**125**	**113**
d4-1,2-dichloroethane (Surrogate)	%	-	**110**	**106**	**125**	**113**
d8-toluene (Surrogate)	%	-	**97**	**97**	**97**	**90**
Bromofluorobenzene (Surrogate)	%	-	**78**	**78**	**78**	**70**
VPH F Bands						
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403						
TRH C10-C14	µg/L	50	<50	<50	<50	<50
TRH C15-C28	µg/L	200	<200	<200	<200	**1400**
TRH C29-C36	µg/L	200	<200	<200	<200	**210**
TRH C37-C40	µg/L	200	<200	<200	<200	<200
TRH C10-C36	µg/L	450	<450	<450	<450	**1600**
TRH C10-C40	µg/L	650	<650	<650	<650	**1600**
TRH F Bands						
TRH >C10-C16 (F2)	µg/L	60	<60	<60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500	<500	**1600**
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500	<500
PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420						
Naphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1	**0.1**	<0.1	<0.1
Anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1	<0.1	<0.1	<0.1
Total PAH (18)	µg/L	1	<1	<1	<1	<1

Parameter	Units	LOR	Sample Number: SE129041.001 Sample Matrix: Water Sample Date: 23/6/14 11:00 Sample Name: GW1-1	SE129041.002 Water 23/6/14 11:00 GW2-1	SE129041.003 Water 23/6/14 11:00 GW3-1	SE129041.004 Water 23/6/14 11:00 GW5-1
PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420 (continued)						
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	**70**	**68**	**68**	**60**
2-fluorobiphenyl (Surrogate)	%	-	**74**	**72**	**70**	**62**
d14-p-terphenyl (Surrogate)	%	-	**108**	**102**	**92**	**84**
OC Pesticides in Water Method: AN400/AN420						
Alpha BHC	µg/L	0.1	<0.1	-	-	-
Hexachlorobenzene (HCB)	µg/L	0.1	<0.1	-	-	-
Beta BHC	µg/L	0.1	<0.1	-	-	-
Lindane (gamma BHC)	µg/L	0.1	<0.1	-	-	-
Delta BHC	µg/L	0.1	<0.1	-	-	-
Heptachlor	µg/L	0.1	<0.1	-	-	-
Aldrin	µg/L	0.1	<0.1	-	-	-
Heptachlor epoxide	µg/L	0.1	<0.1	-	-	-
Gamma Chlordane	µg/L	0.1	<0.1	-	-	-
Alpha Chlordane	µg/L	0.1	<0.1	-	-	-
Alpha Endosulfan	µg/L	0.1	<0.1	-	-	-
o,p'-DDE	µg/L	0.1	<0.1	-	-	-
p,p'-DDE	µg/L	0.1	<0.1	-	-	-
Dieldrin	µg/L	0.1	<0.1	-	-	-
Endrin	µg/L	0.1	<0.1	-	-	-
Beta Endosulfan	µg/L	0.1	<0.1	-	-	-
o,p'-DDD	µg/L	0.1	<0.1	-	-	-
p,p'-DDD	µg/L	0.1	<0.1	-	-	-
Endosulfan sulphate	µg/L	0.1	<0.1	-	-	-
o,p'-DDT	µg/L	0.1	<0.1	-	-	-
p,p'-DDT	µg/L	0.1	<0.1	-	-	-
Endrin ketone	µg/L	0.1	<0.1	-	-	-
Methoxychlor	µg/L	0.1	<0.1	-	-	-
trans-Nonachlor	µg/L	0.1	<0.1	-	-	-
Endrin aldehyde	µg/L	0.1	<0.1	-	-	-
Isodrin	µg/L	0.1	<0.1	-	-	-
Mirex	µg/L	0.1	<0.1	-	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**92**	-	-	-
OP Pesticides in Water Method: AN400/AN420						
Dichlorvos	µg/L	0.5	<0.5	-	-	-
Dimethoate	µg/L	0.5	<0.5	-	-	-
Diazinon (Dimpylate)	µg/L	0.5	<0.5	-	-	-
Fenitrothion	µg/L	0.2	<0.2	-	-	-
Malathion	µg/L	0.2	<0.2	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2	-	-	-
Parathion-ethyl (Parathion)	µg/L	0.2	<0.2	-	-	-
Bromophos Ethyl	µg/L	0.2	<0.2	-	-	-
Methidathion	µg/L	0.5	<0.5	-	-	-
Ethion	µg/L	0.2	<0.2	-	-	-
Azinphos-methyl	µg/L	0.2	<0.2	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE129041.001 Water 23/6/14 11:00 GW1-1	SE129041.002 Water 23/6/14 11:00 GW2-1	SE129041.003 Water 23/6/14 11:00 GW3-1	SE129041.004 Water 23/6/14 11:00 GW5-1
OP Pesticides in Water Method: AN400/AN420 (continued)						
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**74**	-	-	-
d14-p-terphenyl (Surrogate)	%	-	**108**	-	-	-
PCBs in Water Method: AN400/AN420						
Arochlor 1016	µg/L	1	<1	-	-	-
Arochlor 1221	µg/L	1	<1	-	-	-
Arochlor 1232	µg/L	1	<1	-	-	-
Arochlor 1242	µg/L	1	<1	-	-	-
Arochlor 1248	µg/L	1	<1	-	-	-
Arochlor 1254	µg/L	1	<1	-	-	-
Arochlor 1260	µg/L	1	<1	-	-	-
Arochlor 1262	µg/L	1	<1	-	-	-
Arochlor 1268	µg/L	1	<1	-	-	-
Total Arochlors*	µg/L	5	<5	-	-	-
Surrogates						
Tetrachloro-m-xylene (Surrogate)	%	-	**92**	-	-	-
Total Phenolics in Water Method: AN289						
Total Phenols	mg/L	0.01	-	**0.01**	<0.01	-
Ammonia Nitrogen by Discrete Analyser (Aquakem) Method: AN291						
Ammonia Nitrogen, NH_3 as N	mg/L	0.01	**0.12**	**0.41**	**0.24**	**1.2**
Trace Metals (Dissolved) in Water by ICPMS Method: AN318						
Arsenic, As	µg/L	1	<1	<1	<1	**1**
Cadmium, Cd	µg/L	0.1	<0.1	**6.7**	**0.2**	<0.1
Chromium, Cr	µg/L	1	<1	<1	<1	<1
Copper, Cu	µg/L	1	<1	**310**	**2**	**11**
Lead, Pb	µg/L	1	<1	<1	<1	**1**
Nickel, Ni	µg/L	1	**47**	**88**	**62**	**33**
Zinc, Zn	µg/L	5	**69**	**2500**	**120**	**78**
Mercury (dissolved) in Water Method: AN311/AN312						
Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001	<0.0001

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE129041.005 Water 23/6/14 11:00 GWB100	SE129041.006 Water 23/6/14 11:00 R100	SE129041.007 Water 23/6/14 11:00 TB
VOCs in Water Method: AN433/AN434					
Fumigants					
2,2-dichloropropane	µg/L	0.5	-	-	-
1,2-dichloropropane	µg/L	0.5	-	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	-	-
Halogenated Aliphatics					
Dichlorodifluoromethane (CFC-12)	µg/L	5	-	-	-
Chloromethane	µg/L	5	-	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	-	-
Bromomethane	µg/L	10	-	-	-
Chloroethane	µg/L	5	-	-	-
Trichlorofluoromethane	µg/L	1	-	-	-
Iodomethane	µg/L	5	-	-	-
1,1-dichloroethene	µg/L	0.5	-	-	-
Dichloromethane (Methylene chloride)	µg/L	5	-	-	-
Allyl chloride	µg/L	2	-	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	-	-
1,1-dichloroethane	µg/L	0.5	-	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	-	-
Bromochloromethane	µg/L	0.5	-	-	-
1,2-dichloroethane	µg/L	0.5	-	-	-
1,1,1-trichloroethane	µg/L	0.5	-	-	-
1,1-dichloropropene	µg/L	0.5	-	-	-
Carbon tetrachloride	µg/L	0.5	-	-	-
Dibromomethane	µg/L	0.5	-	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	-	-	-
1,1,2-trichloroethane	µg/L	0.5	-	-	-
1,3-dichloropropane	µg/L	0.5	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	-	-
1,2,3-trichloropropane	µg/L	0.5	-	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	-	-
Hexachlorobutadiene	µg/L	0.5	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE129041.005 Water 23/6/14 11:00 GWB100	SE129041.006 Water 23/6/14 11:00 R100	SE129041.007 Water 23/6/14 11:00 TB
VOCs in Water Method: AN433/AN434 (continued)					
Halogenated Aromatics					
Chlorobenzene	µg/L	0.5	-	-	-
Bromobenzene	µg/L	0.5	-	-	-
2-chlorotoluene	µg/L	0.5	-	-	-
4-chlorotoluene	µg/L	0.5	-	-	-
1,3-dichlorobenzene	µg/L	0.5	-	-	-
1,4-dichlorobenzene	µg/L	0.3	-	-	-
1,2-dichlorobenzene	µg/L	0.5	-	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	-	-
Monocyclic Aromatic Hydrocarbons					
Benzene	µg/L	0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5
Styrene (Vinyl benzene)	µg/L	0.5	-	-	-
Isopropylbenzene (Cumene)	µg/L	0.5	-	-	-
n-propylbenzene	µg/L	0.5	-	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	-	-
tert-butylbenzene	µg/L	0.5	-	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	-	-
sec-butylbenzene	µg/L	0.5	-	-	-
p-isopropyltoluene	µg/L	0.5	-	-	-
n-butylbenzene	µg/L	0.5	-	-	-
Nitrogenous Compounds					
Acrylonitrile	µg/L	0.5	-	-	-
2-nitropropane	µg/L	100	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE129041.005 Water 23/6/14 11:00 GWB100	SE129041.006 Water 23/6/14 11:00 R100	SE129041.007 Water 23/6/14 11:00 TB
VOCs in Water Method: AN433/AN434 (continued)						
Oxygenated Compounds						
Acetone (2-propanone)	µg/L	10		-	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2		-	-	-
Vinyl acetate	µg/L	10		-	-	-
MEK (2-butanone)	µg/L	10		-	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5		-	-	-
2-hexanone (MBK)	µg/L	5		-	-	-
Polycyclic VOCs						
Naphthalene	µg/L	0.5		<0.5	<0.5	<0.5
Sulphonated Compounds						
Carbon disulfide	µg/L	2		-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-		**118**	**115**	**109**
d4-1,2-dichloroethane (Surrogate)	%	-		**94**	**99**	**108**
d8-toluene (Surrogate)	%	-		**99**	**97**	**101**
Bromofluorobenzene (Surrogate)	%	-		**81**	**79**	**83**
Totals						
Total Xylenes	µg/L	1.5		<1.5	<1.5	<1.5
Total BTEX	µg/L	3		<3	<3	<3
Total VOC	µg/L	10		-	-	-
Trihalomethanes						
Chloroform (THM)	µg/L	0.5		-	-	-
Bromodichloromethane (THM)	µg/L	0.5		-	-	-
Dibromochloromethane (THM)	µg/L	0.5		-	-	-
Bromoform (THM)	µg/L	0.5		-	-	-

Parameter	Units	LOR	Sample Number: SE129041.005 Sample Matrix: Water Sample Date: 23/6/14 11:00 Sample Name: GWB100	SE129041.006 Water 23/6/14 11:00 R100	SE129041.007 Water 23/6/14 11:00 TB
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410					
TRH C6-C10	µg/L	50	<50	<50	<50
TRH C6-C9	µg/L	40	<40	<40	<40
Surrogates					
Dibromofluoromethane (Surrogate)	%	-	**118**	**115**	**109**
d4-1,2-dichloroethane (Surrogate)	%	-	**94**	**99**	**108**
d8-toluene (Surrogate)	%	-	**99**	**97**	**101**
Bromofluorobenzene (Surrogate)	%	-	**81**	**79**	**83**
VPH F Bands					
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403					
TRH C10-C14	µg/L	50	<50	<50	-
TRH C15-C28	µg/L	200	<200	<200	-
TRH C29-C36	µg/L	200	<200	<200	-
TRH C37-C40	µg/L	200	<200	<200	-
TRH C10-C36	µg/L	450	<450	<450	-
TRH C10-C40	µg/L	650	<650	<650	-
TRH F Bands					
TRH >C10-C16 (F2)	µg/L	60	<60	<60	-
TRH >C16-C34 (F3)	µg/L	500	<500	<500	-
TRH >C34-C40 (F4)	µg/L	500	<500	<500	-
PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420					
Naphthalene	µg/L	0.1	<0.1	-	-
2-methylnaphthalene	µg/L	0.1	<0.1	-	-
1-methylnaphthalene	µg/L	0.1	<0.1	-	-
Acenaphthylene	µg/L	0.1	<0.1	-	-
Acenaphthene	µg/L	0.1	<0.1	-	-
Fluorene	µg/L	0.1	<0.1	-	-
Phenanthrene	µg/L	0.1	**0.1**	-	-
Anthracene	µg/L	0.1	<0.1	-	-
Fluoranthene	µg/L	0.1	<0.1	-	-
Pyrene	µg/L	0.1	<0.1	-	-
Benzo(a)anthracene	µg/L	0.1	<0.1	-	-
Chrysene	µg/L	0.1	<0.1	-	-
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1	-	-
Benzo(k)fluoranthene	µg/L	0.1	<0.1	-	-
Benzo(a)pyrene	µg/L	0.1	<0.1	-	-
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1	-	-
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1	-	-
Benzo(ghi)perylene	µg/L	0.1	<0.1	-	-
Total PAH (18)	µg/L	1	<1	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE129041.005 Water 23/6/14 11:00 GWB100	SE129041.006 Water 23/6/14 11:00 R100	SE129041.007 Water 23/6/14 11:00 TB
PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420 (continued)						
Surrogates						
d5-nitrobenzene (Surrogate)	%	-		**70**	-	-
2-fluorobiphenyl (Surrogate)	%	-		**72**	-	-
d14-p-terphenyl (Surrogate)	%	-		**98**	-	-
OC Pesticides in Water Method: AN400/AN420						
Alpha BHC	µg/L	0.1		-	-	-
Hexachlorobenzene (HCB)	µg/L	0.1		-	-	-
Beta BHC	µg/L	0.1		-	-	-
Lindane (gamma BHC)	µg/L	0.1		-	-	-
Delta BHC	µg/L	0.1		-	-	-
Heptachlor	µg/L	0.1		-	-	-
Aldrin	µg/L	0.1		-	-	-
Heptachlor epoxide	µg/L	0.1		-	-	-
Gamma Chlordane	µg/L	0.1		-	-	-
Alpha Chlordane	µg/L	0.1		-	-	-
Alpha Endosulfan	µg/L	0.1		-	-	-
o,p'-DDE	µg/L	0.1		-	-	-
p,p'-DDE	µg/L	0.1		-	-	-
Dieldrin	µg/L	0.1		-	-	-
Endrin	µg/L	0.1		-	-	-
Beta Endosulfan	µg/L	0.1		-	-	-
o,p'-DDD	µg/L	0.1		-	-	-
p,p'-DDD	µg/L	0.1		-	-	-
Endosulfan sulphate	µg/L	0.1		-	-	-
o,p'-DDT	µg/L	0.1		-	-	-
p,p'-DDT	µg/L	0.1		-	-	-
Endrin ketone	µg/L	0.1		-	-	-
Methoxychlor	µg/L	0.1		-	-	-
trans-Nonachlor	µg/L	0.1		-	-	-
Endrin aldehyde	µg/L	0.1		-	-	-
Isodrin	µg/L	0.1		-	-	-
Mirex	µg/L	0.1		-	-	-
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	-	-
OP Pesticides in Water Method: AN400/AN420						
Dichlorvos	µg/L	0.5		-	-	-
Dimethoate	µg/L	0.5		-	-	-
Diazinon (Dimpylate)	µg/L	0.5		-	-	-
Fenitrothion	µg/L	0.2		-	-	-
Malathion	µg/L	0.2		-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2		-	-	-
Parathion-ethyl (Parathion)	µg/L	0.2		-	-	-
Bromophos Ethyl	µg/L	0.2		-	-	-
Methidathion	µg/L	0.5		-	-	-
Ethion	µg/L	0.2		-	-	-
Azinphos-methyl	µg/L	0.2		-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE129041.005 Water 23/6/14 11:00 GWB100	SE129041.006 Water 23/6/14 11:00 R100	SE129041.007 Water 23/6/14 11:00 TB
OP Pesticides in Water Method: AN400/AN420 (continued)					
Surrogates					
2-fluorobiphenyl (Surrogate)	%	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-
PCBs in Water Method: AN400/AN420					
Arochlor 1016	µg/L	1	-	-	-
Arochlor 1221	µg/L	1	-	-	-
Arochlor 1232	µg/L	1	-	-	-
Arochlor 1242	µg/L	1	-	-	-
Arochlor 1248	µg/L	1	-	-	-
Arochlor 1254	µg/L	1	-	-	-
Arochlor 1260	µg/L	1	-	-	-
Arochlor 1262	µg/L	1	-	-	-
Arochlor 1268	µg/L	1	-	-	-
Total Arochlors*	µg/L	5	-	-	-
Surrogates					
Tetrachloro-m-xylene (Surrogate)	%	-	-	-	-
Total Phenolics in Water Method: AN289					
Total Phenols	mg/L	0.01	-	-	-
Ammonia Nitrogen by Discrete Analyser (Aquakem) Method: AN291					
Ammonia Nitrogen, NH_3 as N	mg/L	0.01	-	-	-
Trace Metals (Dissolved) in Water by ICPMS Method: AN318					
Arsenic, As	µg/L	1	<1	<1	-
Cadmium, Cd	µg/L	0.1	**6.7**	<0.1	-
Chromium, Cr	µg/L	1	<1	<1	-
Copper, Cu	µg/L	1	**290**	<1	-
Lead, Pb	µg/L	1	<1	<1	-
Nickel, Ni	µg/L	1	**87**	<1	-
Zinc, Zn	µg/L	5	**2400**	<5	-
Mercury (dissolved) in Water Method: AN311/AN312					
Mercury	mg/L	0.0001	<0.0001	<0.0001	-

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Ammonia Nitrogen by Discrete Analyser (Aquakem) **Method: ME-(AU)-[ENV]AN291**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Ammonia Nitrogen, NH_3 as N	LB059766	mg/L	0.01	<0.01	1%	102%	101%

Mercury (dissolved) in Water **Method: ME-(AU)-[ENV]AN311/AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB060055	mg/L	0.0001	<0.0001	0%	90%	88%

OC Pesticides in Water **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Alpha BHC	LB059760	µg/L	0.1	<0.1	NA
Hexachlorobenzene (HCB)	LB059760	µg/L	0.1	<0.1	NA
Beta BHC	LB059760	µg/L	0.1	<0.1	NA
Lindane (gamma BHC)	LB059760	µg/L	0.1	<0.1	NA
Delta BHC	LB059760	µg/L	0.1	<0.1	134%
Heptachlor	LB059760	µg/L	0.1	<0.1	139%
Aldrin	LB059760	µg/L	0.1	<0.1	138%
Heptachlor epoxide	LB059760	µg/L	0.1	<0.1	NA
Gamma Chlordane	LB059760	µg/L	0.1	<0.1	NA
Alpha Chlordane	LB059760	µg/L	0.1	<0.1	NA
Alpha Endosulfan	LB059760	µg/L	0.1	<0.1	NA
o,p'-DDE	LB059760	µg/L	0.1	<0.1	NA
p,p'-DDE	LB059760	µg/L	0.1	<0.1	NA
Dieldrin	LB059760	µg/L	0.1	<0.1	135%
Endrin	LB059760	µg/L	0.1	<0.1	140%
Beta Endosulfan	LB059760	µg/L	0.1	<0.1	NA
o,p'-DDD	LB059760	µg/L	0.1	<0.1	NA
p,p'-DDD	LB059760	µg/L	0.1	<0.1	NA
Endosulfan sulphate	LB059760	µg/L	0.1	<0.1	NA
o,p'-DDT	LB059760	µg/L	0.1	<0.1	NA
p,p'-DDT	LB059760	µg/L	0.1	<0.1	130%
Endrin ketone	LB059760	µg/L	0.1	<0.1	NA
Methoxychlor	LB059760	µg/L	0.1	<0.1	NA
trans-Nonachlor	LB059760	µg/L	0.1	<0.1	NA
Endrin aldehyde	LB059760	µg/L	0.1	<0.1	NA
Isodrin	LB059760	µg/L	0.1	<0.1	NA
Mirex	LB059760	µg/L	0.1	<0.1	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB059760	%	-	90%	110%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Water **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dichlorvos	LB059760	µg/L	0.5	<0.5	88%
Dimethoate	LB059760	µg/L	0.5	<0.5	NA
Diazinon (Dimpylate)	LB059760	µg/L	0.5	<0.5	84%
Fenitrothion	LB059760	µg/L	0.2	<0.2	NA
Malathion	LB059760	µg/L	0.2	<0.2	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB059760	µg/L	0.2	<0.2	84%
Parathion-ethyl (Parathion)	LB059760	µg/L	0.2	<0.2	NA
Bromophos Ethyl	LB059760	µg/L	0.2	<0.2	NA
Methidathion	LB059760	µg/L	0.5	<0.5	NA
Ethion	LB059760	µg/L	0.2	<0.2	84%
Azinphos-methyl	LB059760	µg/L	0.2	<0.2	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
2-fluorobiphenyl (Surrogate)	LB059760	%	-	106%	98%
d14-p-terphenyl (Surrogate)	LB059760	%	-	100%	96%

PAH (Polynuclear Aromatic Hydrocarbons) in Water **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Naphthalene	LB059760	µg/L	0.1	<0.1	0%	95%
2-methylnaphthalene	LB059760	µg/L	0.1	<0.1	0%	NA
1-methylnaphthalene	LB059760	µg/L	0.1	<0.1	0%	NA
Acenaphthylene	LB059760	µg/L	0.1	<0.1	0%	95%
Acenaphthene	LB059760	µg/L	0.1	<0.1	0%	95%
Fluorene	LB059760	µg/L	0.1	<0.1	0%	NA
Phenanthrene	LB059760	µg/L	0.1	<0.1	0%	93%
Anthracene	LB059760	µg/L	0.1	<0.1	0%	98%
Fluoranthene	LB059760	µg/L	0.1	<0.1	0%	83%
Pyrene	LB059760	µg/L	0.1	<0.1	0%	100%
Benzo(a)anthracene	LB059760	µg/L	0.1	<0.1	0%	NA
Chrysene	LB059760	µg/L	0.1	<0.1	0%	NA
Benzo(b&j)fluoranthene	LB059760	µg/L	0.1	<0.1	0%	NA
Benzo(k)fluoranthene	LB059760	µg/L	0.1	<0.1	0%	NA
Benzo(a)pyrene	LB059760	µg/L	0.1	<0.1	0%	108%
Indeno(1,2,3-cd)pyrene	LB059760	µg/L	0.1	<0.1	0%	NA
Dibenzo(a&h)anthracene	LB059760	µg/L	0.1	<0.1	0%	NA
Benzo(ghi)perylene	LB059760	µg/L	0.1	<0.1	0%	NA
Total PAH (18)	LB059760	µg/L	1	<1		

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB059760	%	-	106%	0%	96%
2-fluorobiphenyl (Surrogate)	LB059760	%	-	106%	3%	98%
d14-p-terphenyl (Surrogate)	LB059760	%	-	100%	11%	96%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PCBs in Water **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arochlor 1016	LB059760	µg/L	1	<1	NA
Arochlor 1221	LB059760	µg/L	1	<1	NA
Arochlor 1232	LB059760	µg/L	1	<1	NA
Arochlor 1242	LB059760	µg/L	1	<1	NA
Arochlor 1248	LB059760	µg/L	1	<1	NA
Arochlor 1254	LB059760	µg/L	1	<1	NA
Arochlor 1260	LB059760	µg/L	1	<1	107%
Arochlor 1262	LB059760	µg/L	1	<1	NA
Arochlor 1268	LB059760	µg/L	1	<1	NA
Total Arochlors*	LB059760	µg/L	5	<5	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Tetrachloro-m-xylene (Surrogate)	LB059760	%	-	86%	113%

Total Phenolics in Water **Method: ME-(AU)-[ENV]AN289**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Total Phenols	LB059949	mg/L	0.01	<0.01	94%

Trace Metals (Dissolved) in Water by ICPMS **Method: ME-(AU)-[ENV]AN318**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB059899	µg/L	1	<1	0 - 9%	97%	99%
Cadmium, Cd	LB059899	µg/L	0.1	<0.1	0 - 3%	96%	98%
Chromium, Cr	LB059899	µg/L	1	<1	0%	94%	94%
Copper, Cu	LB059899	µg/L	1	<1	0 - 1%	100%	96%
Lead, Pb	LB059899	µg/L	1	<1	0%	100%	98%
Nickel, Ni	LB059899	µg/L	1	<1	1%	103%	101%
Zinc, Zn	LB059899	µg/L	5	<5	1%	104%	107%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

TRH (Total Recoverable Hydrocarbons) in Water **Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
TRH C10-C14	LB059760	µg/L	50	<50	0%	79%
TRH C15-C28	LB059760	µg/L	200	<200	0%	88%
TRH C29-C36	LB059760	µg/L	200	<200	0%	92%
TRH C37-C40	LB059760	µg/L	200	<200	0%	NA
TRH C10-C36	LB059760	µg/L	450	<450	0%	NA
TRH C10-C40	LB059760	µg/L	650	<650	0%	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
TRH >C10-C16 (F2)	LB059760	µg/L	60	<60	0%	82%
TRH >C16-C34 (F3)	LB059760	µg/L	500	<500	0%	94%
TRH >C34-C40 (F4)	LB059760	µg/L	500	<500	0%	94%

VOCs in Water **Method: ME-(AU)-[ENV]AN433/AN434**

Fumigants

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
2,2-dichloropropane	LB059832	µg/L	0.5	<0.5	NA
1,2-dichloropropane	LB059832	µg/L	0.5	<0.5	NA
cis-1,3-dichloropropene	LB059832	µg/L	0.5	<0.5	NA
trans-1,3-dichloropropene	LB059832	µg/L	0.5	<0.5	NA
1,2-dibromoethane (EDB)	LB059832	µg/L	0.5	<0.5	NA

Halogenated Aliphatics

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dichlorodifluoromethane (CFC-12)	LB059832	µg/L	5	<5	NA
Chloromethane	LB059832	µg/L	5	<5	NA
Vinyl chloride (Chloroethene)	LB059832	µg/L	0.3	<0.3	NA
Bromomethane	LB059832	µg/L	10	<10	NA
Chloroethane	LB059832	µg/L	5	<5	NA
Trichlorofluoromethane	LB059832	µg/L	1	<1	NA
Iodomethane	LB059832	µg/L	5	<5	NA
1,1-dichloroethene	LB059832	µg/L	0.5	<0.5	110%
Dichloromethane (Methylene chloride)	LB059832	µg/L	5	<5	NA
Allyl chloride	LB059832	µg/L	2	<2	NA
trans-1,2-dichloroethene	LB059832	µg/L	0.5	<0.5	NA
1,1-dichloroethane	LB059832	µg/L	0.5	<0.5	NA
cis-1,2-dichloroethene	LB059832	µg/L	0.5	<0.5	NA
Bromochloromethane	LB059832	µg/L	0.5	<0.5	NA
1,2-dichloroethane	LB059832	µg/L	0.5	<0.5	110%
1,1,1-trichloroethane	LB059832	µg/L	0.5	<0.5	NA
1,1-dichloropropene	LB059832	µg/L	0.5	<0.5	NA
Carbon tetrachloride	LB059832	µg/L	0.5	<0.5	NA
Dibromomethane	LB059832	µg/L	0.5	<0.5	NA
Trichloroethene (Trichloroethylene,TCE)	LB059832	µg/L	0.5	<0.5	103%
1,1,2-trichloroethane	LB059832	µg/L	0.5	<0.5	NA
1,3-dichloropropane	LB059832	µg/L	0.5	<0.5	NA
Tetrachloroethene (Perchloroethylene,PCE)	LB059832	µg/L	0.5	<0.5	NA
1,1,1,2-tetrachloroethane	LB059832	µg/L	0.5	<0.5	NA
cis-1,4-dichloro-2-butene	LB059832	µg/L	1	<1	NA
1,1,2,2-tetrachloroethane	LB059832	µg/L	0.5	<0.5	NA
1,2,3-trichloropropane	LB059832	µg/L	0.5	<0.5	NA
trans-1,4-dichloro-2-butene	LB059832	µg/L	1	<1	NA
1,2-dibromo-3-chloropropane	LB059832	µg/L	0.5	<0.5	NA
Hexachlorobutadiene	LB059832	µg/L	0.5	<0.5	NA

Halogenated Aromatics

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOCs in Water Method: ME-(AU)-[ENV]AN433/AN434 (continued)

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Chlorobenzene	LB059832	µg/L	0.5	<0.5	101%
Bromobenzene	LB059832	µg/L	0.5	<0.5	NA
2-chlorotoluene	LB059832	µg/L	0.5	<0.5	NA
4-chlorotoluene	LB059832	µg/L	0.5	<0.5	NA
1,3-dichlorobenzene	LB059832	µg/L	0.5	<0.5	NA
1,4-dichlorobenzene	LB059832	µg/L	0.3	<0.3	NA
1,2-dichlorobenzene	LB059832	µg/L	0.5	<0.5	NA
1,2,4-trichlorobenzene	LB059832	µg/L	0.5	<0.5	NA
1,2,3-trichlorobenzene	LB059832	µg/L	0.5	<0.5	NA

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene	LB059832	µg/L	0.5	<0.5	113%
Toluene	LB059832	µg/L	0.5	<0.5	103%
Ethylbenzene	LB059832	µg/L	0.5	<0.5	102%
m/p-xylene	LB059832	µg/L	1	<1	61%
o-xylene	LB059832	µg/L	0.5	<0.5	98%
Styrene (Vinyl benzene)	LB059832	µg/L	0.5	<0.5	NA
Isopropylbenzene (Cumene)	LB059832	µg/L	0.5	<0.5	NA
n-propylbenzene	LB059832	µg/L	0.5	<0.5	NA
1,3,5-trimethylbenzene	LB059832	µg/L	0.5	<0.5	NA
tert-butylbenzene	LB059832	µg/L	0.5	<0.5	NA
1,2,4-trimethylbenzene	LB059832	µg/L	0.5	<0.5	NA
sec-butylbenzene	LB059832	µg/L	0.5	<0.5	NA
p-isopropyltoluene	LB059832	µg/L	0.5	<0.5	NA
n-butylbenzene	LB059832	µg/L	0.5	<0.5	NA

Nitrogenous Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Acrylonitrile	LB059832	µg/L	0.5	<0.5	NA

Oxygenated Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Acetone (2-propanone)	LB059832	µg/L	10	<10	NA
MtBE (Methyl-tert-butyl ether)	LB059832	µg/L	2	<1	NA
Vinyl acetate	LB059832	µg/L	10	<10	NA
MEK (2-butanone)	LB059832	µg/L	10	<10	NA
MIBK (4-methyl-2-pentanone)	LB059832	µg/L	5	<5	NA
2-hexanone (MBK)	LB059832	µg/L	5	<5	NA

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB059832	µg/L	0.5	<0.5	NA

Sulphonated Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Carbon disulfide	LB059832	µg/L	2	<2	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB059832	%	-	105%	98%
d4-1,2-dichloroethane (Surrogate)	LB059832	%	-	110%	96%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOCs in Water **Method: ME-(AU)-[ENV]AN433/AN434 (continued)**

				MB	LCS %Recovery
d8-toluene (Surrogate)	LB059832	%	-	100%	93%
Bromofluorobenzene (Surrogate)	LB059832	%	-	96%	98%

Totals

Parameter	QC Reference	Units	LOR	MB
Total Xylenes	LB059832	µg/L	1.5	<1.5
Total BTEX	LB059832	µg/L	3	<3

Trihalomethanes

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Chloroform (THM)	LB059832	µg/L	0.5	<0.5	64%
Bromodichloromethane (THM)	LB059832	µg/L	0.5	<0.5	NA
Dibromochloromethane (THM)	LB059832	µg/L	0.5	<0.5	NA
Bromoform (THM)	LB059832	µg/L	0.5	<0.5	NA

Volatile Petroleum Hydrocarbons in Water **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C6-C10	LB059832	µg/L	50	<50	115%
TRH C6-C9	LB059832	µg/L	40	<40	108%

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB059832	%	-	119%	92%
d4-1,2-dichloroethane (Surrogate)	LB059832	%	-	103%	94%
d8-toluene (Surrogate)	LB059832	%	-	97%	99%
Bromofluorobenzene (Surrogate)	LB059832	%	-	81%	110%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene (F0)	LB059832	µg/L	0.5	<0.5	NA
TRH C6-C10 minus BTEX (F1)	LB059832	µg/L	50	<50	126%

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN289	Analysis of Total Phenols in Soil Sediment and Water: Steam distillable phenols react with 4-aminoantipyrine at pH 7.9±0.1 in the presence of potassium ferricyanide to form a coloured antipyrine dye analysed by Discrete Analyser. Reference APHA 5530 B/D.
AN291	Ammonia in solution reacts with hypochlorite ions from Sodium Dichloroisocyanuate, and salicylate in the presence of Sodium Nitroprusside to form indophenol blue and measured at 670nm by Discrete Analyser.
AN311/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN400	OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.)
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is not corrected for Naphthalene.
AN403	Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Petroleum Hydrocarbons (TPH) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependant on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN433/AN434/AN410	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

REPORT OF ANALYSIS

Laboratory Reference: A14/3454 [R00]

Client: SGS Environmental Services
Unit 16/33 Maddox Street
Alexandria NSW 2015

Contact: Huong Crawford

Project: TBT Analysis - SE129036

Order No:
Sample Type: Soil
No. of Samples: 4
Date Received: 26/06/2014
Date Completed: 3/07/2014

Laboratory Contact Details:

Client Services Manager: Martin Ryland-Adair
Technical Enquiries: Ian Eckhard
Telephone: +61 2 9888 9077
Fax: +61 2 9888 9577
Email: ian.eckhard@advancedanalytical.com.au

Attached Results Approved By:

Ian Eckhard
Technical Director

Comments:
All samples tested as submitted by client. All attached results have been checked and approved for release.
This is the Final Report and supersedes any reports previously issued with this reference number.
Accredited for compliance with ISO/IEC 17025. This document shall not be reproduced, except in full.

Accreditation No.15109

Advanced Analytical Australia Pty ltd
ABN 20 105 644 979
11 Julius Avenue,
North Ryde NSW 2113 Australia

Ph: + 61 2 9888 9077
Fax: + 61 2 9888 9577
contact@advancedanalytical.com.au
www.advancedanalytical.com.au

Laboratory Reference: A14/3454 [R00]
Project: TBT Analysis - SE129036

Laboratory Reference: **Client Reference:** **Date Sampled:** **Analysis Description**	- - - **Method**	- - - **Units**	**/1** **SE129036.001, SS1** **23/06/2014**	**/2** **SE129036.002, SS2** **23/06/2014**	**/3** **SE129036.003, SS3** **23/06/2014**	**/4** **SE129036.004, SS4** **23/06/2014**
Total Solids						
Total Solids	04-004	%	52.5	64.9	55.4	54.7
Organotins						
Monobutyl tin	04-026	µgSn/kg	<1	<1	<1	<1
Dibutyl tin	04-026	µgSn/kg	19	8.8	12	12
Tributyl tin	04-026	µgSn/kg	45	17	16	15
Surrogate 1 Recovery	04-026	%	80	87	79	85
Date Extracted	04-026	-	2/07/2014	2/07/2014	2/07/2014	2/07/2014
Date Analysed	04-026	-	2/07/2014	2/07/2014	2/07/2014	2/07/2014

Method	Method Description
04-004	Total Solids by gravimetric, %
04-026	Organotins by GCMS, µgSn/kg

Result Comments
[<] Less than
[INS] Insufficient sample for this test
[NA] Test not required

*Analyte is not covered by NATA scope of accreditation.

Advanced Analytical Australia Pty ltd
ABN 20 105 644 979
11 Julius Avenue,
North Ryde NSW 2113 Australia
Ph: + 61 2 9888 9077
Fax: + 61 2 9888 9577
contact@advancedanalytical.com.au
www.advancedanalytical.com.au

Laboratory Reference: A14/3454 [R00]
Project: TBT Analysis - SE129036

QUALITY ASSURANCE REPORT

TEST	UNITS	Blank	Duplicate Sm#	Duplicate Results
Total Solids	%	N/A	A14/3454-1	52.5 || 52.6 || RPD: 0

TEST	UNITS	Blank	Duplicate Sm#	Duplicate Results	Spike Sm#	Spike Results
Monobutyl tin	µgSn/kg	<0.50	A14/3454-1	<1 || <1	External	80%
Dibutyl tin	µgSn/kg	<0.50	A14/3454-1	19 || 20 || RPD: 5	External	91%
Tributyl tin	µgSn/kg	<0.50	A14/3454-1	45 || 34 || RPD: 28	External	100%
Surrogate 1 Recovery	%	92	A14/3454-1	80 || 84 || RPD: 5	External	100%

Comments:
RPD = Relative Percent Deviation
[NT] = Not Tested
[N/A] = Not Applicable
'#' = Spike recovery data could not be calculated due to high levels of contaminants
Acceptable replicate reproducibility limit or RPD: Results < 10 times LOR: no limits.
Results >10 times LOR: 0% - 50%.
Acceptable matrix spike & LCS recovery limits: Trace elements 70-130%
Organic analyses 50-150%
SVOC & speciated phenols 10-140%
Surrogates 10-140%
When levels outside these limits are obtained, an investigation into the cause of the deviation is performed before the batch is accepted or rejected, and results are released.

Advanced Analytical Australia Pty ltd
ABN 20 105 644 979
11 Julius Avenue,
North Ryde NSW 2113 Australia
Ph: + 61 2 9888 9077
Fax: + 61 2 9888 9577
contact@advancedanalytical.com.au
www.advancedanalytical.com.au

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Anthony Barkway	Manager	Huong Crawford
Client	Environmental Investigations	Laboratory	SGS Alexandria Environmental
Address	Suite 6.01, 55 Miller Street NSW 2009	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	02 9516 0722	Telephone	+61 2 8594 0400
Facsimile	02 9516 0741	Facsimile	+61 2 8594 0499
Email	anthony.barkway@eiaustralia.com.au	Email	au.environmental.sydney@sgs.com
Project	**E22215 - 20 Waterview St, Putney NSW**	SGS Reference	**SE129036 R0**
Order Number	**E22215**	Report Number	0000086313
Samples	4	Date Reported	04 Jul 2014
		Date Received	25 Jun 2014

COMMENTS

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

Organotins subcontracted to ADVANCED ANALYTICAL AUSTRALIA, Riverside Corporate Park, 11 Julius Avenue, North Ryde NSW 2113, NATA Accreditation Number: 15101.

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Huong Crawford
Production Manager

Kamrul Ahsan
Senior Chemist

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE129036.001 Soil 23/6/14 11:00 SS1	SE129036.002 Soil 23/6/14 11:00 SS2	SE129036.003 Soil 23/6/14 11:00 SS3	SE129036.004 Soil 23/6/14 11:00 SS4
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420							
Naphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1		**0.1**	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1		**0.3**	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1		**0.9**	**0.2**	**0.2**	**0.3**
Pyrene	mg/kg	0.1		**0.9**	**0.2**	**0.3**	**0.3**
Benzo(a)anthracene	mg/kg	0.1		**0.8**	**0.1**	**0.2**	**0.2**
Chrysene	mg/kg	0.1		**0.4**	<0.1	**0.2**	**0.2**
Benzo(b&j)fluoranthene	mg/kg	0.1		**1.0**	**0.2**	**0.4**	**0.3**
Benzo(k)fluoranthene	mg/kg	0.1		**0.4**	<0.1	**0.2**	**0.2**
Benzo(a)pyrene	mg/kg	0.1		**0.8**	**0.2**	**0.3**	**0.3**
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		**0.4**	**0.1**	**0.2**	**0.2**
Dibenzo(a&h)anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1		**0.3**	<0.1	**0.2**	**0.1**
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2		**1.0**	<0.2	**0.4**	**0.3**
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3		**1.1**	**0.3**	**0.5**	**0.4**
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2		**1.1**	**0.3**	**0.4**	**0.4**
Total PAH	mg/kg	0.8		**6.3**	**0.9**	**2.1**	**1.9**
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		**96**	**96**	**94**	**98**
2-fluorobiphenyl (Surrogate)	%	-		**92**	**90**	**90**	**94**
d14-p-terphenyl (Surrogate)	%	-		**98**	**98**	**98**	**106**
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320							
Arsenic, As	mg/kg	1		**20**	**13**	**16**	**17**
Cadmium, Cd	mg/kg	0.3		**0.7**	<0.3	**0.7**	**0.7**
Chromium, Cr	mg/kg	0.5		**100**	**42**	**95**	**100**
Copper, Cu	mg/kg	0.5		**160**	**72**	**130**	**140**
Lead, Pb	mg/kg	1		**160**	**85**	**150**	**160**
Nickel, Ni	mg/kg	0.5		**13**	**5.9**	**12**	**13**
Zinc, Zn	mg/kg	2		**520**	**240**	**520**	**560**
Mercury in Soil Method: AN312							
Mercury	mg/kg	0.05		**0.48**	**0.21**	**0.48**	**0.47**
Moisture Content Method: AN002							
% Moisture	%	0.5		**50**	**36**	**46**	**46**

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil **Method: ME-(AU)-[ENV]AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB059956	mg/kg	0.05	<0.05	0 - 44%	106%	88%

Moisture Content **Method: ME-(AU)-[ENV]AN002**

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB059957	%	0.5	8 - 19%

PAH (Polynuclear Aromatic Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Naphthalene	LB059835	mg/kg	0.1	<0.1	0%	91%	88%	12%
2-methylnaphthalene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
1-methylnaphthalene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Acenaphthylene	LB059835	mg/kg	0.1	<0.1	0%	99%	93%	11%
Acenaphthene	LB059835	mg/kg	0.1	<0.1	0%	102%	101%	12%
Fluorene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Phenanthrene	LB059835	mg/kg	0.1	<0.1	0%	94%	97%	1%
Anthracene	LB059835	mg/kg	0.1	<0.1	0%	89%	89%	0%
Fluoranthene	LB059835	mg/kg	0.1	<0.1	0%	92%	92%	2%
Pyrene	LB059835	mg/kg	0.1	<0.1	0%	82%	76%	1%
Benzo(a)anthracene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Chrysene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Benzo(b&j)fluoranthene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Benzo(k)fluoranthene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Benzo(a)pyrene	LB059835	mg/kg	0.1	<0.1	0%	98%	94%	8%
Indeno(1,2,3-cd)pyrene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Dibenzo(a&h)anthracene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Benzo(ghi)perylene	LB059835	mg/kg	0.1	<0.1	0%	NA	NA	NA
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	LB059835	TEQ	0.2	<0.2	0%	NA	NA	NA
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	LB059835	TEQ (mg/kg)	0.3	<0.3	0%	NA	NA	NA
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	LB059835	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA	NA
Total PAH	LB059835	mg/kg	0.8	<0.8	0%	NA	NA	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
d5-nitrobenzene (Surrogate)	LB059835	%	-	88%	0%	88%	84%	5%
2-fluorobiphenyl (Surrogate)	LB059835	%	-	84%	10%	84%	78%	7%
d14-p-terphenyl (Surrogate)	LB059835	%	-	86%	2%	94%	94%	2%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest **Method: ME-(AU)-[ENV]AN040/AN320**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB059951	mg/kg	1	<1	25 - 28%	101%	90%
Cadmium, Cd	LB059951	mg/kg	0.3	<0.3	1 - 14%	102%	89%
Chromium, Cr	LB059951	mg/kg	0.5	<0.5	5 - 17%	101%	89%
Copper, Cu	LB059951	mg/kg	0.5	<0.5	9 - 25%	102%	90%
Lead, Pb	LB059951	mg/kg	1	<1	4 - 8%	101%	83%
Nickel, Ni	LB059951	mg/kg	0.5	<0.5	21 - 28%	102%	86%
Zinc, Zn	LB059951	mg/kg	2	<2	7 - 16%	101%	78%

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analsysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN088	Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Anthony Barkway	Manager	Jon Dicker
Client	Environmental Investigations	Laboratory	SGS Cairns Environmental
Address	Suite 6.01, 55 Miller Street NSW 2009	Address	Unit 2, 58 Comport St Portsmith QLD 4870
Telephone	02 8594 0400	Telephone	+61 07 4035 5111
Facsimile	02 8594 0499	Facsimile	+61 07 4035 5122
Email	au.environmental.sydney@sgs.com	Email	AU.Environmental.Cairns@sgs.com
Project	**SE128733 E22215- 20 Waterview St Putney**	SGS Reference	**CE110434 R0**
Order Number	**SE128733**	Report Number	0000018293
Samples	1	Date Reported	24 Jun 2014
		Date Received	17 Jun 2014

COMMENTS

Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(3146)

SIGNATORIES

Anthony Nilsson
Operations Manager

Jon Dicker
Manager Northern QLD

Parameter	Units	LOR	Sample Number: CE110434.001 Sample Matrix: Soil Sample Date: 10 Jun 2014 Sample Name: SE128733.035 EIL-1
Particle sizing of soils by sieving Method: AN005			
Passing 75µm	%w/w	1	**51**
Retained 75µm	%w/w	1	**49**
Particle sizing of soils <75µm by hydrometer Method: AN005			
Sedimentation Diameter 1	mm	0.0001	**0.0554**
Passing Sedimentation Diameter 1	%w/w	1	**41**
Retained Sedimentation Diameter 1	%w/w	1	**10**
Sedimentation Diameter 2	mm	0.0001	**0.0394**
Passing Sedimentation Diameter 2	%w/w	1	**39**
Retained Sedimentation Diameter 2	%w/w	1	**2**
Sedimentation Diameter 3	mm	0.0001	**0.0282**
Passing Sedimentation Diameter 3	%w/w	1	**34**
Retained Sedimentation Diameter 3	%w/w	1	**5**
Sedimentation Diameter 4	mm	0.0001	**0.0202**
Passing Sedimentation Diameter 4	%w/w	1	**30**
Retained Sedimentation Diameter 4	%w/w	1	**5**
Sedimentation Diameter 5	mm	0.0001	**0.0148**
Passing Sedimentation Diameter 5	%w/w	1	**28**
Retained Sedimentation Diameter 5	%w/w	1	**2**
Sedimentation Diameter 6	mm	0.0001	**0.0106**
Passing Sedimentation Diameter 6	%w/w	1	**23**
Retained Sedimentation Diameter 6	%w/w	1	**5**
Sedimentation Diameter 7	mm	0.0001	**0.0075**
Passing Sedimentation Diameter 7	%w/w	1	**21**
Retained Sedimentation Diameter 7	%w/w	1	**2**
Sedimentation Diameter 8	mm	0.0001	**0.0054**
Passing Sedimentation Diameter 8	%w/w	1	**20**
Retained Sedimentation Diameter 8	%w/w	1	**1**
Sedimentation Diameter 9	mm	0.0001	**0.0038**
Passing Sedimentation Diameter 9	%w/w	1	**20**
Retained Sedimentation Diameter 9	%w/w	1	<1
Sedimentation Diameter 10	mm	0.0001	**0.0015**
Passing Sedimentation Diameter 10	%w/w	1	**19**
Retained Sedimentation Diameter 10	%w/w	1	**1**
Sedimentation Diameter 11	mm	0.0001	**0.0011**
Passing Sedimentation Diameter 11	%w/w	1	**19**
Retained Sedimentation Diameter 11	%w/w	1	<1

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

No QC samples were reported for this job.

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN005	The particle size distribution of a soil is determined by wet sieving, using a maximum of 900 mL of deionised water to sieve all fractions down to 75 µm. Referenced to AS1289.3.6.1 and AS1141.11.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS

Contact	Anthony Barkway
Client	Environmental Investigations
Address	Suite 6.01, 55 Miller Street NSW 2009
Telephone	02 9516 0722
Facsimile	02 9516 0741
Email	anthony.barkway@eiaustralia.com.au
Project	**E22215 – 20 Waterview Street, Putney NSW**
Order Number	**E22215**
Samples	35

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	SE128733 R0
Report Number	0000085551
Date Reported	24 Jun 2014
Date Received	11 Jun 2014

COMMENTS

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

Clay Content - Subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146.

No respirable fibres detected in all samples using trace analysis technique.
Sample #15 : 1-5mm length fibre bundle found in 8x4x2mm cement sheet fragments.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Huong Crawford
Production Manager

Jaimie Cheung
Metals Chemist

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

ANALYTICAL REPORT

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w
SE128733.004	BH302-1	Soil	154g Clay,sand,rocks	06 Jun 2014	No Asbestos Found	<0.01
SE128733.008	BH304-1	Soil	116g Clay,sand	10 Jun 2014	No Asbestos Found	<0.01
SE128733.010	BH305-1	Soil	144g Sand,soil,rocks	06 Jun 2014	No Asbestos Found	<0.01
SE128733.012	BH306-1	Soil	114g Sand,soil,rocks	06 Jun 2014	No Asbestos Found	<0.01
SE128733.015	BH307-1	Soil	105g Sand,soil,rocks	06 Jun 2014	Chrysotile & Crocidolite Asbestos Found Organic Fibres Detected	>0.01
SE128733.018	BH308-1	Soil	97g Sand,soil,rocks	06 Jun 2014	No Asbestos Found	<0.01
SE128733.023	BH311-1	Soil	135g Clay,sand,soil	10 Jun 2014	No Asbestos Found Synthetic Mineral Fibres Detected Organic Fibres Detected	<0.01
SE128733.025	BH312-1	Soil	100g Clay,sand,soil	10 Jun 2014	No Asbestos Found Organic Fibres Detected	<0.01
SE128733.026	BH313-1	Soil	188g Clay,sand,soil	10 Jun 2014	No Asbestos Found Synthetic Mineral Fibres Detected Organic Fibres Detected	<0.01
SE128733.028	BH314-1	Soil	152g Clay,sand,soil	10 Jun 2014	No Asbestos Found Organic Fibres Detected	<0.01

METHOD SUMMARY

SE128733 R0

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	Not Accredited
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.

This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Sampled by the client.

Where reported: 'Asbestos Detected': Asbestos detected by polarized light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarized light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarized light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here : http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Anthony Barkway	Manager	Huong Crawford
Client	Environmental Investigations	Laboratory	SGS Alexandria Environmental
Address	Suite 6.01, 55 Miller Street NSW 2009	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	02 9516 0722	Telephone	+61 2 8594 0400
Facsimile	02 9516 0741	Facsimile	+61 2 8594 0499
Email	anthony.barkway@eiaustralia.com.au	Email	au.environmental.sydney@sgs.com
Project	**E22215 – 20 Waterview Street, Putney NSW**	SGS Reference	**SE128733 R0**
Order Number	**E22215**	Report Number	0000085549
Samples	35	Date Reported	24 Jun 2014
		Date Received	11 Jun 2014

COMMENTS

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

Clay Content - Subcontracted to SGS Cairns, 2/58 Comport St, Portsmith QLD 4870, NATA Accreditation Number: 2562, Site Number: 3146.

No respirable fibres detected in all samples using trace analysis technique.
Sample #15 : 1-5mm length fibre bundle found in 8x4x2mm cement sheet fragments.
Asbestos analysed by Approved Identifier Yusuf Kuthpudin.

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Huong Crawford
Production Manager

Jaimie Cheung
Metals Chemist

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.001 Soil 6/6/14 11:00 BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
VOC's in Soil Method: AN433/AN434							
Fumigants							
2,2-dichloropropane	mg/kg	0.1		-	<0.1	<0.1	-
1,2-dichloropropane	mg/kg	0.1		-	<0.1	<0.1	-
cis-1,3-dichloropropene	mg/kg	0.1		-	<0.1	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1		-	<0.1	<0.1	-
1,2-dibromoethane (EDB)	mg/kg	0.1		-	<0.1	<0.1	-
Halogenated Aliphatics							
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	<1	<1	-
Chloromethane	mg/kg	1		-	<1	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	<0.1	<0.1	-
Bromomethane	mg/kg	1		-	<1	<1	-
Chloroethane	mg/kg	1		-	<1	<1	-
Trichlorofluoromethane	mg/kg	1		-	<1	<1	-
Iodomethane	mg/kg	5		-	<5	<5	-
1,1-dichloroethene	mg/kg	0.1		-	<0.1	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	<0.5	<0.5	-
Allyl chloride	mg/kg	0.1		-	<0.1	<0.1	-
trans-1,2-dichloroethene	mg/kg	0.1		-	<0.1	<0.1	-
1,1-dichloroethane	mg/kg	0.1		-	<0.1	<0.1	-
cis-1,2-dichloroethene	mg/kg	0.1		-	<0.1	<0.1	-
Bromochloromethane	mg/kg	0.1		-	<0.1	<0.1	-
1,2-dichloroethane	mg/kg	0.1		-	<0.1	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1		-	<0.1	<0.1	-
1,1-dichloropropene	mg/kg	0.1		-	<0.1	<0.1	-
Carbon tetrachloride	mg/kg	0.1		-	<0.1	<0.1	-
Dibromomethane	mg/kg	0.1		-	<0.1	<0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1		-	<0.1	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1		-	<0.1	<0.1	-
1,3-dichloropropane	mg/kg	0.1		-	<0.1	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	<0.1	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	<0.1	<0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1		-	<1	<1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	<0.1	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1		-	<0.1	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1		-	<1	<1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	<0.1	<0.1	-
Hexachlorobutadiene	mg/kg	0.1		-	<0.1	<0.1	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.001 Soil 6/6/14 11:00 BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
VOC's in Soil Method: AN433/AN434 (continued)						
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	-	<0.1	<0.1	-
Bromobenzene	mg/kg	0.1	-	<0.1	<0.1	-
2-chlorotoluene	mg/kg	0.1	-	<0.1	<0.1	-
4-chlorotoluene	mg/kg	0.1	-	<0.1	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1	-	<0.1	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1	-	<0.1	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1	-	<0.1	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	<0.1	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	<0.1	<0.1	-
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Styrene (Vinyl benzene)	mg/kg	0.1	-	<0.1	<0.1	-
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isopropylbenzene (Cumene)	mg/kg	0.1	-	<0.1	<0.1	-
n-propylbenzene	mg/kg	0.1	-	<0.1	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	<0.1	<0.1	-
tert-butylbenzene	mg/kg	0.1	-	<0.1	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	<0.1	<0.1	-
sec-butylbenzene	mg/kg	0.1	-	<0.1	<0.1	-
p-isopropyltoluene	mg/kg	0.1	-	<0.1	<0.1	-
n-butylbenzene	mg/kg	0.1	-	<0.1	<0.1	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	-	<0.1	<0.1	-
2-nitropropane	mg/kg	10	-	<10	<10	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	-	<10	<10	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	<0.1	<0.1	-
Vinyl acetate	mg/kg	10	-	<10	<10	-
MEK (2-butanone)	mg/kg	10	-	<10	<10	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	<1	<1	-
2-hexanone (MBK)	mg/kg	5	-	<5	<5	-

Parameter	Units	LOR	Sample Number: SE128733.001 Sample Matrix: Soil Sample Date: 6/6/14 11:00 Sample Name: BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
VOC's in Soil Method: AN433/AN434 (continued)						
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	<0.5	<0.5	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**84**	**78**	**77**	**81**
d4-1,2-dichloroethane (Surrogate)	%	-	**106**	**113**	**107**	**106**
d8-toluene (Surrogate)	%	-	**114**	**93**	**86**	**96**
Bromofluorobenzene (Surrogate)	%	-	**85**	**94**	**86**	**81**
Totals						
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Total VOC*	mg/kg	24	-	-	-	-
Trihalomethanes						
Chloroform	mg/kg	0.1	-	<0.1	<0.1	-
Bromodichloromethane	mg/kg	0.1	-	<0.1	<0.1	-
Chlorodibromomethane	mg/kg	0.1	-	<0.1	<0.1	-
Bromoform	mg/kg	0.1	-	<0.1	<0.1	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410						
TRH C6-C10	mg/kg	25	<25	-	<25	<25
TRH C6-C9	mg/kg	20	<20	-	<20	<20
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**84**	-	**76**	**81**
d4-1,2-dichloroethane (Surrogate)	%	-	**106**	-	**97**	**106**
d8-toluene (Surrogate)	%	-	**114**	-	**98**	**96**
Bromofluorobenzene (Surrogate)	%	-	**85**	-	**76**	**81**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.001 Soil 6/6/14 11:00 BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)							
VPH F Bands							
Benzene (F0)	mg/kg	0.1		<0.1	-	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25		<25	-	<25	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403							
TRH C10-C14	mg/kg	20		<20	-	<20	<20
TRH C15-C28	mg/kg	45		**64**	-	<45	<45
TRH C29-C36	mg/kg	45		**180**	-	<45	<45
TRH C37-C40	mg/kg	100		**180**	-	<100	<100
TRH C10-C36 Total	mg/kg	110		**240**	-	<110	<110
TRH C10-C40 Total	mg/kg	210		**420**	-	<210	<210
TRH F Bands							
TRH >C10-C16 (F2)	mg/kg	25		**27**	-	<25	<25
TRH >C16-C34 (F3)	mg/kg	90		**110**	-	<90	<90
TRH >C34-C40 (F4)	mg/kg	120		**300**	-	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420							
Naphthalene	mg/kg	0.1		<0.1	-	-	<0.1
2-methylnaphthalene	mg/kg	0.1		**0.1**	-	-	<0.1
1-methylnaphthalene	mg/kg	0.1		**0.1**	-	-	<0.1
Acenaphthylene	mg/kg	0.1		<0.1	-	-	<0.1
Acenaphthene	mg/kg	0.1		<0.1	-	-	<0.1
Fluorene	mg/kg	0.1		<0.1	-	-	<0.1
Phenanthrene	mg/kg	0.1		**0.2**	-	-	<0.1
Anthracene	mg/kg	0.1		<0.1	-	-	<0.1
Fluoranthene	mg/kg	0.1		<0.1	-	-	**0.1**
Pyrene	mg/kg	0.1		**0.1**	-	-	<0.1
Benzo(a)anthracene	mg/kg	0.1		<0.1	-	-	<0.1
Chrysene	mg/kg	0.1		<0.1	-	-	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1		<0.1	-	-	**0.1**
Benzo(k)fluoranthene	mg/kg	0.1		<0.1	-	-	<0.1
Benzo(a)pyrene	mg/kg	0.1		<0.1	-	-	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		<0.1	-	-	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1		<0.1	-	-	<0.1
Benzo(ghi)perylene	mg/kg	0.1		<0.1	-	-	<0.1
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2		<0.2	-	-	<0.2
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3		<0.3	-	-	<0.3
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2		<0.2	-	-	<0.2
Total PAH	mg/kg	0.8		<0.8	-	-	<0.8

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.001 Soil 6/6/14 11:00 BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)						
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	**92**	-	-	**100**
2-fluorobiphenyl (Surrogate)	%	-	**84**	-	-	**88**
d14-p-terphenyl (Surrogate)	%	-	**76**	-	-	**74**
OC Pesticides in Soil Method: AN400/AN420						
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	-	-	<0.1
Alpha BHC	mg/kg	0.1	<0.1	-	-	<0.1
Lindane	mg/kg	0.1	<0.1	-	-	<0.1
Heptachlor	mg/kg	0.1	<0.1	-	-	<0.1
Aldrin	mg/kg	0.1	<0.1	-	-	<0.1
Beta BHC	mg/kg	0.1	<0.1	-	-	<0.1
Delta BHC	mg/kg	0.1	<0.1	-	-	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	-	-	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	-	-	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	-	-	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	-	-	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	-	-	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	-	-	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	-	-	<0.1
Dieldrin	mg/kg	0.2	<0.2	-	-	<0.2
Endrin	mg/kg	0.2	<0.2	-	-	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	-	-	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	-	-	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	-	-	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	-	-	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	-	-	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	-	-	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	-	-	<0.1
Methoxychlor	mg/kg	0.1	<0.1	-	-	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	-	-	<0.1
Isodrin	mg/kg	0.1	<0.1	-	-	<0.1
Mirex	mg/kg	0.1	<0.1	-	-	<0.1

Parameter	Units	LOR	Sample Number: SE128733.001 Sample Matrix: Soil Sample Date: 6/6/14 11:00 Sample Name: BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
OC Pesticides in Soil Method: AN400/AN420 (continued)						
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**100**	-	-	**115**
OP Pesticides in Soil Method: AN400/AN420						
Dichlorvos	mg/kg	0.5	<0.5	-	-	<0.5
Dimethoate	mg/kg	0.5	<0.5	-	-	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	-	-	<0.5
Fenitrothion	mg/kg	0.2	<0.2	-	-	<0.2
Malathion	mg/kg	0.2	<0.2	-	-	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	-	-	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	-	-	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	-	-	<0.2
Methidathion	mg/kg	0.5	<0.5	-	-	<0.5
Ethion	mg/kg	0.2	<0.2	-	-	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	-	-	<0.2
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**84**	-	-	**88**
d14-p-terphenyl (Surrogate)	%	-	**76**	-	-	**74**
PCBs in Soil Method: AN400/AN420						
Arochlor 1016	mg/kg	0.2	<0.2	-	-	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	-	-	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	-	-	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	-	-	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	-	-	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	-	-	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	-	-	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	-	-	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	-	-	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	-	-	<1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.001 Soil 6/6/14 11:00 BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
PCBs in Soil Method: AN400/AN420 (continued)						
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**100**	-	-	**115**
Total Phenolics in Soil Method: AN289						
Total Phenols	mg/kg	0.1	-	-	-	-
pH in soil (1:5) Method: AN101						
pH	pH Units	-	-	-	-	-
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122						
Exchangeable Sodium, Na	mg/kg	2	-	-	-	-
Exchangeable Sodium, Na	meq/100g	0.01	-	-	-	-
Exchangeable Sodium Percentage*	%	0.1	-	-	-	-
Exchangeable Potassium, K	mg/kg	2	-	-	-	-
Exchangeable Potassium, K	meq/100g	0.01	-	-	-	-
Exchangeable Potassium Percentage*	%	0.1	-	-	-	-
Exchangeable Calcium, Ca	mg/kg	2	-	-	-	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	-	-	-
Exchangeable Calcium Percentage*	%	0.1	-	-	-	-
Exchangeable Magnesium, Mg	mg/kg	2	-	-	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	-	-	-
Exchangeable Magnesium Percentage*	%	0.1	-	-	-	-
Cation Exchange Capacity	meq/100g	0.02	-	-	-	-
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320						
Arsenic, As	mg/kg	3	<3	-	-	**6**
Cadmium, Cd	mg/kg	0.3	**0.5**	-	-	**0.5**
Chromium, Cr	mg/kg	0.3	**11**	-	-	**14**
Copper, Cu	mg/kg	0.5	**53**	-	-	**90**
Lead, Pb	mg/kg	1	**5**	-	-	**110**
Nickel, Ni	mg/kg	0.5	**48**	-	-	**8.9**
Zinc, Zn	mg/kg	0.5	**45**	-	-	**160**

Parameter	Units	LOR	SE128733.001 Soil 6/6/14 11:00 BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
Mercury in Soil Method: AN312						
Mercury	mg/kg	0.01	<0.01	-	-	**0.17**
Fibre Identification in soil Method: AN602						
FibreID						
Asbestos Detected	No unit	-	-	-	-	No
SemiQuant						
Estimated Fibres	%w/w	0.01	-	-	-	<0.01
Moisture Content Method: AN002						
% Moisture	%	0.5	**4.8**	**5.4**	**9.7**	**20**
VOCs in Water Method: AN433/AN434						
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Polycyclic VOCs						
Naphthalene	µg/L	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
Totals						
Total Xylenes	µg/L	1.5	-	-	-	-
Total BTEX	µg/L	3	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.001 Soil 6/6/14 11:00 BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410							
TRH C6-C10	µg/L	50		-	-	-	-
TRH C6-C9	µg/L	40		-	-	-	-
Surrogates							
Dibromofluoromethane (Surrogate)	%	-		-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-		-	-	-	-
d8-toluene (Surrogate)	%	-		-	-	-	-
Bromofluorobenzene (Surrogate)	%	-		-	-	-	-
VPH F Bands							
Benzene (F0)	µg/L	0.5		-	-	-	-
TRH C6-C10 minus BTEX (F1)	µg/L	50		-	-	-	-
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403							
TRH C10-C14	µg/L	50		-	-	-	-
TRH C15-C28	µg/L	200		-	-	-	-
TRH C29-C36	µg/L	200		-	-	-	-
TRH C37-C40	µg/L	200		-	-	-	-
TRH C10-C36	µg/L	450		-	-	-	-
TRH C10-C40	µg/L	650		-	-	-	-
TRH F Bands							
TRH >C10-C16 (F2)	µg/L	60		-	-	-	-
TRH >C16-C34 (F3)	µg/L	500		-	-	-	-
TRH >C34-C40 (F4)	µg/L	500		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.001 Soil 6/6/14 11:00 BH301-1	SE128733.002 Soil 6/6/14 11:00 BH301-2	SE128733.003 Soil 6/6/14 11:00 BH301-5	SE128733.004 Soil 6/6/14 11:00 BH302-1
Trace Metals (Dissolved) in Water by ICPMS Method: AN318							
Arsenic, As	µg/L	1		-	-	-	-
Cadmium, Cd	µg/L	0.1		-	-	-	-
Chromium, Cr	µg/L	1		-	-	-	-
Copper, Cu	µg/L	1		-	-	-	-
Lead, Pb	µg/L	1		-	-	-	-
Nickel, Ni	µg/L	1		-	-	-	-
Zinc, Zn	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311/AN312							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
VOC's in Soil Method: AN433/AN434							
Fumigants							
2,2-dichloropropane	mg/kg	0.1		-	-	-	-
1,2-dichloropropane	mg/kg	0.1		-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1		-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1		-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1		-	-	-	-
Halogenated Aliphatics							
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	-	-	-
Chloromethane	mg/kg	1		-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	-	-	-
Bromomethane	mg/kg	1		-	-	-	-
Chloroethane	mg/kg	1		-	-	-	-
Trichlorofluoromethane	mg/kg	1		-	-	-	-
Iodomethane	mg/kg	5		-	-	-	-
1,1-dichloroethene	mg/kg	0.1		-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	-	-	-
Allyl chloride	mg/kg	0.1		-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1		-	-	-	-
1,1-dichloroethane	mg/kg	0.1		-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1		-	-	-	-
Bromochloromethane	mg/kg	0.1		-	-	-	-
1,2-dichloroethane	mg/kg	0.1		-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1		-	-	-	-
1,1-dichloropropene	mg/kg	0.1		-	-	-	-
Carbon tetrachloride	mg/kg	0.1		-	-	-	-
Dibromomethane	mg/kg	0.1		-	-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1		-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1		-	-	-	-
1,3-dichloropropane	mg/kg	0.1		-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1		-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1		-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1		-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	-	-	-
Hexachlorobutadiene	mg/kg	0.1		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
VOC's in Soil Method: AN433/AN434 (continued)						
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	-	-	-	-
Bromobenzene	mg/kg	0.1	-	-	-	-
2-chlorotoluene	mg/kg	0.1	-	-	-	-
4-chlorotoluene	mg/kg	0.1	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-	-
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	-	<0.1	-	<0.1
Toluene	mg/kg	0.1	-	<0.1	-	<0.1
Ethylbenzene	mg/kg	0.1	-	<0.1	-	<0.1
m/p-xylene	mg/kg	0.2	-	<0.2	-	<0.2
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-	-
o-xylene	mg/kg	0.1	-	<0.1	-	<0.1
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-	-
n-propylbenzene	mg/kg	0.1	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-	-
tert-butylbenzene	mg/kg	0.1	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	-	-	-	-
2-nitropropane	mg/kg	10	-	-	-	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	-
Vinyl acetate	mg/kg	10	-	-	-	-
MEK (2-butanone)	mg/kg	10	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
VOC's in Soil Method: AN433/AN434 (continued)							
Polycyclic VOCs							
Naphthalene	mg/kg	0.1		-	<0.1	-	<0.1
Sulphonated Compounds							
Carbon disulfide	mg/kg	0.5		-	-	-	-
Surrogates							
Dibromofluoromethane (Surrogate)	%	-		-	**74**	-	**73**
d4-1,2-dichloroethane (Surrogate)	%	-		-	**97**	-	**98**
d8-toluene (Surrogate)	%	-		-	**93**	-	**97**
Bromofluorobenzene (Surrogate)	%	-		-	**78**	-	**78**
Totals							
Total Xylenes*	mg/kg	0.3		-	<0.3	-	<0.3
Total BTEX*	mg/kg	0.6		-	<0.6	-	<0.6
Total VOC*	mg/kg	24		-	-	-	-
Trihalomethanes							
Chloroform	mg/kg	0.1		-	-	-	-
Bromodichloromethane	mg/kg	0.1		-	-	-	-
Chlorodibromomethane	mg/kg	0.1		-	-	-	-
Bromoform	mg/kg	0.1		-	-	-	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410							
TRH C6-C10	mg/kg	25		-	<25	-	<25
TRH C6-C9	mg/kg	20		-	<20	-	<20
Surrogates							
Dibromofluoromethane (Surrogate)	%	-		-	**74**	-	**73**
d4-1,2-dichloroethane (Surrogate)	%	-		-	**97**	-	**98**
d8-toluene (Surrogate)	%	-		-	**93**	-	**97**
Bromofluorobenzene (Surrogate)	%	-		-	**78**	-	**78**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)							
VPH F Bands							
Benzene (F0)	mg/kg	0.1		-	<0.1	-	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25		-	<25	-	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403							
TRH C10-C14	mg/kg	20		-	<20	-	<20
TRH C15-C28	mg/kg	45		-	<45	-	<45
TRH C29-C36	mg/kg	45		-	<45	-	<45
TRH C37-C40	mg/kg	100		-	<100	-	<100
TRH C10-C36 Total	mg/kg	110		-	<110	-	<110
TRH C10-C40 Total	mg/kg	210		-	<210	-	<210
TRH F Bands							
TRH >C10-C16 (F2)	mg/kg	25		-	<25	-	<25
TRH >C16-C34 (F3)	mg/kg	90		-	<90	-	<90
TRH >C34-C40 (F4)	mg/kg	120		-	<120	-	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420							
Naphthalene	mg/kg	0.1		-	<0.1	-	<0.1
2-methylnaphthalene	mg/kg	0.1		-	<0.1	-	<0.1
1-methylnaphthalene	mg/kg	0.1		-	<0.1	-	<0.1
Acenaphthylene	mg/kg	0.1		-	<0.1	-	<0.1
Acenaphthene	mg/kg	0.1		-	<0.1	-	<0.1
Fluorene	mg/kg	0.1		-	<0.1	-	<0.1
Phenanthrene	mg/kg	0.1		-	<0.1	-	<0.1
Anthracene	mg/kg	0.1		-	<0.1	-	<0.1
Fluoranthene	mg/kg	0.1		-	<0.1	-	<0.1
Pyrene	mg/kg	0.1		-	<0.1	-	<0.1
Benzo(a)anthracene	mg/kg	0.1		-	<0.1	-	<0.1
Chrysene	mg/kg	0.1		-	<0.1	-	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1		-	<0.1	-	<0.1
Benzo(k)fluoranthene	mg/kg	0.1		-	<0.1	-	<0.1
Benzo(a)pyrene	mg/kg	0.1		-	<0.1	-	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		-	<0.1	-	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1		-	<0.1	-	<0.1
Benzo(ghi)perylene	mg/kg	0.1		-	<0.1	-	<0.1
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2		-	<0.2	-	<0.2
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3		-	<0.3	-	<0.3
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2		-	<0.2	-	<0.2
Total PAH	mg/kg	0.8		-	<0.8	-	<0.8

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)							
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		-	**102**	-	**92**
2-fluorobiphenyl (Surrogate)	%	-		-	**90**	-	**84**
d14-p-terphenyl (Surrogate)	%	-		-	**82**	-	**72**
OC Pesticides in Soil Method: AN400/AN420							
Hexachlorobenzene (HCB)	mg/kg	0.1		-	<0.1	-	<0.1
Alpha BHC	mg/kg	0.1		-	<0.1	-	<0.1
Lindane	mg/kg	0.1		-	<0.1	-	<0.1
Heptachlor	mg/kg	0.1		-	<0.1	-	<0.1
Aldrin	mg/kg	0.1		-	<0.1	-	<0.1
Beta BHC	mg/kg	0.1		-	<0.1	-	<0.1
Delta BHC	mg/kg	0.1		-	<0.1	-	<0.1
Heptachlor epoxide	mg/kg	0.1		-	<0.1	-	<0.1
o,p'-DDE	mg/kg	0.1		-	<0.1	-	<0.1
Alpha Endosulfan	mg/kg	0.2		-	<0.2	-	<0.2
Gamma Chlordane	mg/kg	0.1		-	<0.1	-	<0.1
Alpha Chlordane	mg/kg	0.1		-	<0.1	-	<0.1
trans-Nonachlor	mg/kg	0.1		-	<0.1	-	<0.1
p,p'-DDE	mg/kg	0.1		-	<0.1	-	<0.1
Dieldrin	mg/kg	0.2		-	<0.2	-	<0.2
Endrin	mg/kg	0.2		-	<0.2	-	<0.2
o,p'-DDD	mg/kg	0.1		-	<0.1	-	<0.1
o,p'-DDT	mg/kg	0.1		-	<0.1	-	<0.1
Beta Endosulfan	mg/kg	0.2		-	<0.2	-	<0.2
p,p'-DDD	mg/kg	0.1		-	<0.1	-	<0.1
p,p'-DDT	mg/kg	0.1		-	<0.1	-	<0.1
Endosulfan sulphate	mg/kg	0.1		-	<0.1	-	<0.1
Endrin Aldehyde	mg/kg	0.1		-	<0.1	-	<0.1
Methoxychlor	mg/kg	0.1		-	<0.1	-	<0.1
Endrin Ketone	mg/kg	0.1		-	<0.1	-	<0.1
Isodrin	mg/kg	0.1		-	<0.1	-	<0.1
Mirex	mg/kg	0.1		-	<0.1	-	<0.1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
OC Pesticides in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	**111**	-	**103**
OP Pesticides in Soil Method: AN400/AN420							
Dichlorvos	mg/kg	0.5		-	<0.5	-	<0.5
Dimethoate	mg/kg	0.5		-	<0.5	-	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		-	<0.5	-	<0.5
Fenitrothion	mg/kg	0.2		-	<0.2	-	<0.2
Malathion	mg/kg	0.2		-	<0.2	-	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		-	<0.2	-	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		-	<0.2	-	<0.2
Bromophos Ethyl	mg/kg	0.2		-	<0.2	-	<0.2
Methidathion	mg/kg	0.5		-	<0.5	-	<0.5
Ethion	mg/kg	0.2		-	<0.2	-	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		-	<0.2	-	<0.2
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		-	**90**	-	**84**
d14-p-terphenyl (Surrogate)	%	-		-	**82**	-	**72**
PCBs in Soil Method: AN400/AN420							
Arochlor 1016	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1221	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1232	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1242	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1248	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1254	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1260	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1262	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1268	mg/kg	0.2		-	<0.2	-	<0.2
Total PCBs (Arochlors)	mg/kg	1		-	<1	-	<1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
PCBs in Soil Method: AN400/AN420 (continued)						
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	**111**	-	**103**
Total Phenolics in Soil Method: AN289						
Total Phenols	mg/kg	0.1	-	-	-	-
pH in soil (1:5) Method: AN101						
pH	pH Units	-	-	-	-	-
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122						
Exchangeable Sodium, Na	mg/kg	2	-	-	-	-
Exchangeable Sodium, Na	meq/100g	0.01	-	-	-	-
Exchangeable Sodium Percentage*	%	0.1	-	-	-	-
Exchangeable Potassium, K	mg/kg	2	-	-	-	-
Exchangeable Potassium, K	meq/100g	0.01	-	-	-	-
Exchangeable Potassium Percentage*	%	0.1	-	-	-	-
Exchangeable Calcium, Ca	mg/kg	2	-	-	-	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	-	-	-
Exchangeable Calcium Percentage*	%	0.1	-	-	-	-
Exchangeable Magnesium, Mg	mg/kg	2	-	-	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	-	-	-
Exchangeable Magnesium Percentage*	%	0.1	-	-	-	-
Cation Exchange Capacity	meq/100g	0.02	-	-	-	-
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320						
Arsenic, As	mg/kg	3	**5**	**4**	**6**	<3
Cadmium, Cd	mg/kg	0.3	<0.3	**0.7**	**0.3**	<0.3
Chromium, Cr	mg/kg	0.3	**13**	**13**	**8.6**	**6.3**
Copper, Cu	mg/kg	0.5	**1.6**	**97**	**49**	**12**
Lead, Pb	mg/kg	1	**5**	**66**	**21**	**8**
Nickel, Ni	mg/kg	0.5	**0.7**	**17**	**5.6**	**1.9**
Zinc, Zn	mg/kg	0.5	**3.5**	**260**	**37**	**11**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
Mercury in Soil Method: AN312						
Mercury	mg/kg	0.01	**0.02**	**0.07**	**0.05**	**0.01**
Fibre Identification in soil Method: AN602						
FibreID						
Asbestos Detected	No unit	-	-	-	-	No
SemiQuant						
Estimated Fibres	%w/w	0.01	-	-	-	<0.01
Moisture Content Method: AN002						
% Moisture	%	0.5	**14**	**15**	**10**	**10**
VOCs in Water Method: AN433/AN434						
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Polycyclic VOCs						
Naphthalene	µg/L	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
Totals						
Total Xylenes	µg/L	1.5	-	-	-	-
Total BTEX	µg/L	3	-	-	-	-

Parameter	Units	LOR	Sample Number: SE128733.005 Sample Matrix: Soil Sample Date: 6/6/14 11:00 Sample Name: BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410						
TRH C6-C10	µg/L	50	-	-	-	-
TRH C6-C9	µg/L	40	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
VPH F Bands						
Benzene (F0)	µg/L	0.5	-	-	-	-
TRH C6-C10 minus BTEX (F1)	µg/L	50	-	-	-	-
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403						
TRH C10-C14	µg/L	50	-	-	-	-
TRH C15-C28	µg/L	200	-	-	-	-
TRH C29-C36	µg/L	200	-	-	-	-
TRH C37-C40	µg/L	200	-	-	-	-
TRH C10-C36	µg/L	450	-	-	-	-
TRH C10-C40	µg/L	650	-	-	-	-
TRH F Bands						
TRH >C10-C16 (F2)	µg/L	60	-	-	-	-
TRH >C16-C34 (F3)	µg/L	500	-	-	-	-
TRH >C34-C40 (F4)	µg/L	500	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.005 Soil 6/6/14 11:00 BH302-2	SE128733.006 Soil 6/6/14 11:00 BH303-1	SE128733.007 Soil 6/6/14 11:00 BH303-2	SE128733.008 Soil 10/6/14 11:00 BH304-1
Trace Metals (Dissolved) in Water by ICPMS Method: AN318							
Arsenic, As	µg/L	1		-	-	-	-
Cadmium, Cd	µg/L	0.1		-	-	-	-
Chromium, Cr	µg/L	1		-	-	-	-
Copper, Cu	µg/L	1		-	-	-	-
Lead, Pb	µg/L	1		-	-	-	-
Nickel, Ni	µg/L	1		-	-	-	-
Zinc, Zn	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311/AN312							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.009 Soil 10/6/14 11:00 BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
VOC's in Soil Method: AN433/AN434						
Fumigants						
2,2-dichloropropane	mg/kg	0.1	-	-	-	-
1,2-dichloropropane	mg/kg	0.1	-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	-	-
Halogenated Aliphatics						
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	-	-
Chloromethane	mg/kg	1	-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	-	-
Bromomethane	mg/kg	1	-	-	-	-
Chloroethane	mg/kg	1	-	-	-	-
Trichlorofluoromethane	mg/kg	1	-	-	-	-
Iodomethane	mg/kg	5	-	-	-	-
1,1-dichloroethene	mg/kg	0.1	-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	-	-
Allyl chloride	mg/kg	0.1	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-	-	-
1,1-dichloroethane	mg/kg	0.1	-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-	-	-
Bromochloromethane	mg/kg	0.1	-	-	-	-
1,2-dichloroethane	mg/kg	0.1	-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	-	-	-
1,1-dichloropropene	mg/kg	0.1	-	-	-	-
Carbon tetrachloride	mg/kg	0.1	-	-	-	-
Dibromomethane	mg/kg	0.1	-	-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	-	-	-
1,3-dichloropropane	mg/kg	0.1	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1	-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.009 Soil 10/6/14 11:00 BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
VOC's in Soil Method: AN433/AN434 (continued)						
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	-	-	-	-
Bromobenzene	mg/kg	0.1	-	-	-	-
2-chlorotoluene	mg/kg	0.1	-	-	-	-
4-chlorotoluene	mg/kg	0.1	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-	-
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	-	-	<0.1
Toluene	mg/kg	0.1	<0.1	-	-	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	-	-	<0.1
m/p-xylene	mg/kg	0.2	<0.2	-	-	<0.2
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-	-
o-xylene	mg/kg	0.1	<0.1	-	-	<0.1
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-	-
n-propylbenzene	mg/kg	0.1	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-	-
tert-butylbenzene	mg/kg	0.1	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	-	-	-	-
2-nitropropane	mg/kg	10	-	-	-	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	-
Vinyl acetate	mg/kg	10	-	-	-	-
MEK (2-butanone)	mg/kg	10	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-	-

Parameter	Units	LOR	Sample Number: SE128733.009 Sample Matrix: Soil Sample Date: 10/6/14 11:00 Sample Name: BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
VOC's in Soil Method: AN433/AN434 (continued)						
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	-	-	<0.1
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**76**	-	-	**73**
d4-1,2-dichloroethane (Surrogate)	%	-	**102**	-	-	**84**
d8-toluene (Surrogate)	%	-	**100**	-	-	**88**
Bromofluorobenzene (Surrogate)	%	-	**79**	-	-	**81**
Totals						
Total Xylenes*	mg/kg	0.3	<0.3	-	-	<0.3
Total BTEX*	mg/kg	0.6	<0.6	-	-	<0.6
Total VOC*	mg/kg	24	-	-	-	-
Trihalomethanes						
Chloroform	mg/kg	0.1	-	-	-	-
Bromodichloromethane	mg/kg	0.1	-	-	-	-
Chlorodibromomethane	mg/kg	0.1	-	-	-	-
Bromoform	mg/kg	0.1	-	-	-	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410						
TRH C6-C10	mg/kg	25	<25	-	-	<25
TRH C6-C9	mg/kg	20	<20	-	-	<20
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**76**	-	-	**73**
d4-1,2-dichloroethane (Surrogate)	%	-	**102**	-	-	**84**
d8-toluene (Surrogate)	%	-	**100**	-	-	**88**
Bromofluorobenzene (Surrogate)	%	-	**79**	-	-	**81**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.009 Soil 10/6/14 11:00 BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)							
VPH F Bands							
Benzene (F0)	mg/kg	0.1		<0.1	-	-	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25		<25	-	-	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403							
TRH C10-C14	mg/kg	20		<20	-	-	<20
TRH C15-C28	mg/kg	45		<45	-	-	<45
TRH C29-C36	mg/kg	45		<45	-	-	<45
TRH C37-C40	mg/kg	100		<100	-	-	<100
TRH C10-C36 Total	mg/kg	110		<110	-	-	<110
TRH C10-C40 Total	mg/kg	210		<210	-	-	<210
TRH F Bands							
TRH >C10-C16 (F2)	mg/kg	25		<25	-	-	<25
TRH >C16-C34 (F3)	mg/kg	90		<90	-	-	<90
TRH >C34-C40 (F4)	mg/kg	120		<120	-	-	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420							
Naphthalene	mg/kg	0.1		<0.1	-	-	-
2-methylnaphthalene	mg/kg	0.1		<0.1	-	-	-
1-methylnaphthalene	mg/kg	0.1		<0.1	-	-	-
Acenaphthylene	mg/kg	0.1		<0.1	-	-	-
Acenaphthene	mg/kg	0.1		<0.1	-	-	-
Fluorene	mg/kg	0.1		<0.1	-	-	-
Phenanthrene	mg/kg	0.1		<0.1	-	-	-
Anthracene	mg/kg	0.1		<0.1	-	-	-
Fluoranthene	mg/kg	0.1		<0.1	-	-	-
Pyrene	mg/kg	0.1		<0.1	-	-	-
Benzo(a)anthracene	mg/kg	0.1		<0.1	-	-	-
Chrysene	mg/kg	0.1		<0.1	-	-	-
Benzo(b&j)fluoranthene	mg/kg	0.1		<0.1	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1		<0.1	-	-	-
Benzo(a)pyrene	mg/kg	0.1		<0.1	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		<0.1	-	-	-
Dibenzo(a&h)anthracene	mg/kg	0.1		<0.1	-	-	-
Benzo(ghi)perylene	mg/kg	0.1		<0.1	-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2		<0.2	-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3		<0.3	-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2		<0.2	-	-	-
Total PAH	mg/kg	0.8		<0.8	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.009 Soil 10/6/14 11:00 BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)							
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		**92**	-	-	-
2-fluorobiphenyl (Surrogate)	%	-		**86**	-	-	-
d14-p-terphenyl (Surrogate)	%	-		**72**	-	-	-
OC Pesticides in Soil Method: AN400/AN420							
Hexachlorobenzene (HCB)	mg/kg	0.1		-	<0.1	-	<0.1
Alpha BHC	mg/kg	0.1		-	<0.1	-	<0.1
Lindane	mg/kg	0.1		-	<0.1	-	<0.1
Heptachlor	mg/kg	0.1		-	<0.1	-	<0.1
Aldrin	mg/kg	0.1		-	<0.1	-	<0.1
Beta BHC	mg/kg	0.1		-	<0.1	-	<0.1
Delta BHC	mg/kg	0.1		-	<0.1	-	<0.1
Heptachlor epoxide	mg/kg	0.1		-	<0.1	-	<0.1
o,p'-DDE	mg/kg	0.1		-	<0.1	-	<0.1
Alpha Endosulfan	mg/kg	0.2		-	<0.2	-	<0.2
Gamma Chlordane	mg/kg	0.1		-	<0.1	-	<0.1
Alpha Chlordane	mg/kg	0.1		-	<0.1	-	<0.1
trans-Nonachlor	mg/kg	0.1		-	<0.1	-	<0.1
p,p'-DDE	mg/kg	0.1		-	<0.1	-	<0.1
Dieldrin	mg/kg	0.2		-	<0.2	-	<0.2
Endrin	mg/kg	0.2		-	<0.2	-	<0.2
o,p'-DDD	mg/kg	0.1		-	<0.1	-	<0.1
o,p'-DDT	mg/kg	0.1		-	<0.1	-	<0.1
Beta Endosulfan	mg/kg	0.2		-	<0.2	-	<0.2
p,p'-DDD	mg/kg	0.1		-	<0.1	-	<0.1
p,p'-DDT	mg/kg	0.1		-	<0.1	-	<0.1
Endosulfan sulphate	mg/kg	0.1		-	<0.1	-	<0.1
Endrin Aldehyde	mg/kg	0.1		-	<0.1	-	<0.1
Methoxychlor	mg/kg	0.1		-	<0.1	-	<0.1
Endrin Ketone	mg/kg	0.1		-	<0.1	-	<0.1
Isodrin	mg/kg	0.1		-	<0.1	-	<0.1
Mirex	mg/kg	0.1		-	<0.1	-	<0.1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.009 Soil 10/6/14 11:00 BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
OC Pesticides in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	**92**	-	**95**
OP Pesticides in Soil Method: AN400/AN420							
Dichlorvos	mg/kg	0.5		-	<0.5	-	<0.5
Dimethoate	mg/kg	0.5		-	<0.5	-	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		-	<0.5	-	<0.5
Fenitrothion	mg/kg	0.2		-	<0.2	-	<0.2
Malathion	mg/kg	0.2		-	<0.2	-	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		-	<0.2	-	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		-	<0.2	-	<0.2
Bromophos Ethyl	mg/kg	0.2		-	<0.2	-	<0.2
Methidathion	mg/kg	0.5		-	<0.5	-	<0.5
Ethion	mg/kg	0.2		-	<0.2	-	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		-	<0.2	-	<0.2
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		-	**84**	-	**84**
d14-p-terphenyl (Surrogate)	%	-		-	**70**	-	**78**
PCBs in Soil Method: AN400/AN420							
Arochlor 1016	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1221	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1232	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1242	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1248	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1254	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1260	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1262	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1268	mg/kg	0.2		-	<0.2	-	<0.2
Total PCBs (Arochlors)	mg/kg	1		-	<1	-	<1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.009 Soil 10/6/14 11:00 BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
PCBs in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	**92**	-	**95**
Total Phenolics in Soil Method: AN289							
Total Phenols	mg/kg	0.1		-	-	-	-
pH in soil (1:5) Method: AN101							
pH	pH Units	-		-	-	-	-
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122							
Exchangeable Sodium, Na	mg/kg	2		-	-	-	-
Exchangeable Sodium, Na	meq/100g	0.01		-	-	-	-
Exchangeable Sodium Percentage*	%	0.1		-	-	-	-
Exchangeable Potassium, K	mg/kg	2		-	-	-	-
Exchangeable Potassium, K	meq/100g	0.01		-	-	-	-
Exchangeable Potassium Percentage*	%	0.1		-	-	-	-
Exchangeable Calcium, Ca	mg/kg	2		-	-	-	-
Exchangeable Calcium, Ca	meq/100g	0.01		-	-	-	-
Exchangeable Calcium Percentage*	%	0.1		-	-	-	-
Exchangeable Magnesium, Mg	mg/kg	2		-	-	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02		-	-	-	-
Exchangeable Magnesium Percentage*	%	0.1		-	-	-	-
Cation Exchange Capacity	meq/100g	0.02		-	-	-	-
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320							
Arsenic, As	mg/kg	3		-	<3	**7**	**6**
Cadmium, Cd	mg/kg	0.3		-	**0.3**	<0.3	**3.4**
Chromium, Cr	mg/kg	0.3		-	**9.7**	**14**	**15**
Copper, Cu	mg/kg	0.5		-	**52**	<0.5	**17000**
Lead, Pb	mg/kg	1		-	**7**	**4**	**370**
Nickel, Ni	mg/kg	0.5		-	**36**	<0.5	**70**
Zinc, Zn	mg/kg	0.5		-	**33**	**1.9**	**1100**

Parameter	Units	LOR	Sample Number: SE128733.009 Sample Matrix: Soil Sample Date: 10/6/14 11:00 Sample Name: BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
Mercury in Soil Method: AN312						
Mercury	mg/kg	0.01	-	<0.01	<0.01	**0.18**
Fibre Identification in soil Method: AN602						
FibreID						
Asbestos Detected	No unit	-	-	No	-	No
SemiQuant						
Estimated Fibres	%w/w	0.01	-	<0.01	-	<0.01
Moisture Content Method: AN002						
% Moisture	%	0.5	**22**	**4.6**	**7.9**	**7.3**
VOCs in Water Method: AN433/AN434						
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Polycyclic VOCs						
Naphthalene	µg/L	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
Totals						
Total Xylenes	µg/L	1.5	-	-	-	-
Total BTEX	µg/L	3	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.009 Soil 10/6/14 11:00 BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410						
TRH C6-C10	µg/L	50	-	-	-	-
TRH C6-C9	µg/L	40	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
VPH F Bands						
Benzene (F0)	µg/L	0.5	-	-	-	-
TRH C6-C10 minus BTEX (F1)	µg/L	50	-	-	-	-
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403						
TRH C10-C14	µg/L	50	-	-	-	-
TRH C15-C28	µg/L	200	-	-	-	-
TRH C29-C36	µg/L	200	-	-	-	-
TRH C37-C40	µg/L	200	-	-	-	-
TRH C10-C36	µg/L	450	-	-	-	-
TRH C10-C40	µg/L	650	-	-	-	-
TRH F Bands						
TRH >C10-C16 (F2)	µg/L	60	-	-	-	-
TRH >C16-C34 (F3)	µg/L	500	-	-	-	-
TRH >C34-C40 (F4)	µg/L	500	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.009 Soil 10/6/14 11:00 BH304-2	SE128733.010 Soil 6/6/14 11:00 BH305-1	SE128733.011 Soil 6/6/14 11:00 BH305-3	SE128733.012 Soil 6/6/14 11:00 BH306-1
Trace Metals (Dissolved) in Water by ICPMS Method: AN318							
Arsenic, As	µg/L	1		-	-	-	-
Cadmium, Cd	µg/L	0.1		-	-	-	-
Chromium, Cr	µg/L	1		-	-	-	-
Copper, Cu	µg/L	1		-	-	-	-
Lead, Pb	µg/L	1		-	-	-	-
Nickel, Ni	µg/L	1		-	-	-	-
Zinc, Zn	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311/AN312							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
VOC's in Soil Method: AN433/AN434							
Fumigants							
2,2-dichloropropane	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,2-dichloropropane	mg/kg	0.1		-	<0.1	<0.1	<0.1
cis-1,3-dichloropropene	mg/kg	0.1		-	<0.1	<0.1	<0.1
trans-1,3-dichloropropene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,2-dibromoethane (EDB)	mg/kg	0.1		-	<0.1	<0.1	<0.1
Halogenated Aliphatics							
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	<1	<1	<1
Chloromethane	mg/kg	1		-	<1	<1	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	<0.1	<0.1	<0.1
Bromomethane	mg/kg	1		-	<1	<1	<1
Chloroethane	mg/kg	1		-	<1	<1	<1
Trichlorofluoromethane	mg/kg	1		-	<1	<1	<1
Iodomethane	mg/kg	5		-	<5	<5	<5
1,1-dichloroethene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.1		-	<0.1	<0.1	<0.1
trans-1,2-dichloroethene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,1-dichloroethane	mg/kg	0.1		-	<0.1	<0.1	<0.1
cis-1,2-dichloroethene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Bromochloromethane	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,2-dichloroethane	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,1,1-trichloroethane	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,1-dichloropropene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Carbon tetrachloride	mg/kg	0.1		-	<0.1	<0.1	<0.1
Dibromomethane	mg/kg	0.1		-	<0.1	<0.1	<0.1
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,1,2-trichloroethane	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,3-dichloropropane	mg/kg	0.1		-	<0.1	<0.1	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	<0.1	<0.1	<0.1
cis-1,4-dichloro-2-butene	mg/kg	1		-	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,2,3-trichloropropane	mg/kg	0.1		-	<0.1	<0.1	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1		-	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	<0.1	<0.1	<0.1
Hexachlorobutadiene	mg/kg	0.1		-	<0.1	<0.1	<0.1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
VOC's in Soil Method: AN433/AN434 (continued)							
Halogenated Aromatics							
Chlorobenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Bromobenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
2-chlorotoluene	mg/kg	0.1		-	<0.1	<0.1	<0.1
4-chlorotoluene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,3-dichlorobenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,4-dichlorobenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,2-dichlorobenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Monocyclic Aromatic Hydrocarbons							
Benzene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Styrene (Vinyl benzene)	mg/kg	0.1		-	<0.1	<0.1	<0.1
o-xylene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Isopropylbenzene (Cumene)	mg/kg	0.1		-	<0.1	<0.1	<0.1
n-propylbenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
tert-butylbenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
sec-butylbenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
p-isopropyltoluene	mg/kg	0.1		-	<0.1	<0.1	<0.1
n-butylbenzene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Nitrogenous Compounds							
Acrylonitrile	mg/kg	0.1		-	<0.1	<0.1	<0.1
2-nitropropane	mg/kg	10		-	<10	<10	<10
Oxygenated Compounds							
Acetone (2-propanone)	mg/kg	10		-	<10	<10	<10
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1		-	<0.1	<0.1	<0.1
Vinyl acetate	mg/kg	10		-	<10	<10	<10
MEK (2-butanone)	mg/kg	10		-	<10	<10	<10
MIBK (4-methyl-2-pentanone)	mg/kg	1		-	<1	<1	<1
2-hexanone (MBK)	mg/kg	5		-	<5	<5	<5

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
VOC's in Soil Method: AN433/AN434 (continued)						
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	<0.5	<0.5	<0.5
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**77**	**80**	**81**	**72**
d4-1,2-dichloroethane (Surrogate)	%	-	**90**	**103**	**82**	**92**
d8-toluene (Surrogate)	%	-	**97**	**97**	**71**	**86**
Bromofluorobenzene (Surrogate)	%	-	**86**	**99**	**73**	**87**
Totals						
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Total VOC*	mg/kg	24	-	-	-	-
Trihalomethanes						
Chloroform	mg/kg	0.1	-	<0.1	<0.1	<0.1
Bromodichloromethane	mg/kg	0.1	-	<0.1	<0.1	<0.1
Chlorodibromomethane	mg/kg	0.1	-	<0.1	<0.1	<0.1
Bromoform	mg/kg	0.1	-	<0.1	<0.1	<0.1
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410						
TRH C6-C10	mg/kg	25	<25	<25	**34**	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**77**	**83**	**82**	**75**
d4-1,2-dichloroethane (Surrogate)	%	-	**90**	**99**	**79**	**89**
d8-toluene (Surrogate)	%	-	**97**	**103**	**79**	**93**
Bromofluorobenzene (Surrogate)	%	-	**86**	**88**	**77**	**88**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)							
VPH F Bands							
Benzene (F0)	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25		<25	<25	**34**	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403							
TRH C10-C14	mg/kg	20		<20	<20	**78**	<20
TRH C15-C28	mg/kg	45		**310**	<45	**460**	**110**
TRH C29-C36	mg/kg	45		**62**	<45	**56**	**94**
TRH C37-C40	mg/kg	100		<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110		**370**	<110	**600**	**210**
TRH C10-C40 Total	mg/kg	210		**370**	<210	**600**	<210
TRH F Bands							
TRH >C10-C16 (F2)	mg/kg	25		<25	<25	**140**	<25
TRH >C16-C34 (F3)	mg/kg	90		**370**	<90	**450**	**200**
TRH >C34-C40 (F4)	mg/kg	120		<120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420							
Naphthalene	mg/kg	0.1		-	-	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1		-	-	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1		-	-	<0.1	<0.1
Acenaphthylene	mg/kg	0.1		-	-	<0.1	<0.1
Acenaphthene	mg/kg	0.1		-	-	<0.1	<0.1
Fluorene	mg/kg	0.1		-	-	<0.1	<0.1
Phenanthrene	mg/kg	0.1		-	-	<0.1	<0.1
Anthracene	mg/kg	0.1		-	-	<0.1	<0.1
Fluoranthene	mg/kg	0.1		-	-	<0.1	<0.1
Pyrene	mg/kg	0.1		-	-	**0.1**	<0.1
Benzo(a)anthracene	mg/kg	0.1		-	-	<0.1	<0.1
Chrysene	mg/kg	0.1		-	-	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1		-	-	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1		-	-	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1		-	-	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		-	-	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1		-	-	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1		-	-	<0.1	<0.1
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2		-	-	<0.2	<0.2
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3		-	-	<0.3	<0.3
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2		-	-	<0.2	<0.2
Total PAH	mg/kg	0.8		-	-	<0.8	<0.8

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)							
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		-	-	**96**	**88**
2-fluorobiphenyl (Surrogate)	%	-		-	-	**86**	**86**
d14-p-terphenyl (Surrogate)	%	-		-	-	**82**	**76**
OC Pesticides in Soil Method: AN400/AN420							
Hexachlorobenzene (HCB)	mg/kg	0.1		-	-	<0.1	-
Alpha BHC	mg/kg	0.1		-	-	<0.1	-
Lindane	mg/kg	0.1		-	-	<0.1	-
Heptachlor	mg/kg	0.1		-	-	<0.1	-
Aldrin	mg/kg	0.1		-	-	<0.1	-
Beta BHC	mg/kg	0.1		-	-	<0.1	-
Delta BHC	mg/kg	0.1		-	-	<0.1	-
Heptachlor epoxide	mg/kg	0.1		-	-	<0.1	-
o,p'-DDE	mg/kg	0.1		-	-	<0.1	-
Alpha Endosulfan	mg/kg	0.2		-	-	<0.2	-
Gamma Chlordane	mg/kg	0.1		-	-	<0.1	-
Alpha Chlordane	mg/kg	0.1		-	-	<0.1	-
trans-Nonachlor	mg/kg	0.1		-	-	<0.1	-
p,p'-DDE	mg/kg	0.1		-	-	<0.1	-
Dieldrin	mg/kg	0.2		-	-	<0.2	-
Endrin	mg/kg	0.2		-	-	<0.2	-
o,p'-DDD	mg/kg	0.1		-	-	<0.1	-
o,p'-DDT	mg/kg	0.1		-	-	<0.1	-
Beta Endosulfan	mg/kg	0.2		-	-	<0.2	-
p,p'-DDD	mg/kg	0.1		-	-	<0.1	-
p,p'-DDT	mg/kg	0.1		-	-	<0.1	-
Endosulfan sulphate	mg/kg	0.1		-	-	<0.1	-
Endrin Aldehyde	mg/kg	0.1		-	-	<0.1	-
Methoxychlor	mg/kg	0.1		-	-	<0.1	-
Endrin Ketone	mg/kg	0.1		-	-	<0.1	-
Isodrin	mg/kg	0.1		-	-	<0.1	-
Mirex	mg/kg	0.1		-	-	<0.1	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
OC Pesticides in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	-	**105**	-
OP Pesticides in Soil Method: AN400/AN420							
Dichlorvos	mg/kg	0.5		-	-	<0.5	-
Dimethoate	mg/kg	0.5		-	-	<0.5	-
Diazinon (Dimpylate)	mg/kg	0.5		-	-	<0.5	-
Fenitrothion	mg/kg	0.2		-	-	<0.2	-
Malathion	mg/kg	0.2		-	-	<0.2	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		-	-	<0.2	-
Parathion-ethyl (Parathion)	mg/kg	0.2		-	-	<0.2	-
Bromophos Ethyl	mg/kg	0.2		-	-	<0.2	-
Methidathion	mg/kg	0.5		-	-	<0.5	-
Ethion	mg/kg	0.2		-	-	<0.2	-
Azinphos-methyl (Guthion)	mg/kg	0.2		-	-	<0.2	-
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		-	-	**86**	-
d14-p-terphenyl (Surrogate)	%	-		-	-	**82**	-
PCBs in Soil Method: AN400/AN420							
Arochlor 1016	mg/kg	0.2		-	-	<0.2	-
Arochlor 1221	mg/kg	0.2		-	-	<0.2	-
Arochlor 1232	mg/kg	0.2		-	-	<0.2	-
Arochlor 1242	mg/kg	0.2		-	-	<0.2	-
Arochlor 1248	mg/kg	0.2		-	-	<0.2	-
Arochlor 1254	mg/kg	0.2		-	-	<0.2	-
Arochlor 1260	mg/kg	0.2		-	-	<0.2	-
Arochlor 1262	mg/kg	0.2		-	-	<0.2	-
Arochlor 1268	mg/kg	0.2		-	-	<0.2	-
Total PCBs (Arochlors)	mg/kg	1		-	-	<1	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
PCBs in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	-	**105**	-
Total Phenolics in Soil Method: AN289							
Total Phenols	mg/kg	0.1		**0.3**	-	-	-
pH in soil (1:5) Method: AN101							
pH	pH Units	-		-	-	-	-
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122							
Exchangeable Sodium, Na	mg/kg	2		-	-	-	-
Exchangeable Sodium, Na	meq/100g	0.01		-	-	-	-
Exchangeable Sodium Percentage*	%	0.1		-	-	-	-
Exchangeable Potassium, K	mg/kg	2		-	-	-	-
Exchangeable Potassium, K	meq/100g	0.01		-	-	-	-
Exchangeable Potassium Percentage*	%	0.1		-	-	-	-
Exchangeable Calcium, Ca	mg/kg	2		-	-	-	-
Exchangeable Calcium, Ca	meq/100g	0.01		-	-	-	-
Exchangeable Calcium Percentage*	%	0.1		-	-	-	-
Exchangeable Magnesium, Mg	mg/kg	2		-	-	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02		-	-	-	-
Exchangeable Magnesium Percentage*	%	0.1		-	-	-	-
Cation Exchange Capacity	meq/100g	0.02		-	-	-	-
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320							
Arsenic, As	mg/kg	3		-	-	**10**	-
Cadmium, Cd	mg/kg	0.3		-	-	**11**	-
Chromium, Cr	mg/kg	0.3		-	-	**75**	-
Copper, Cu	mg/kg	0.5		-	-	**18000**	-
Lead, Pb	mg/kg	1		-	-	**1400**	-
Nickel, Ni	mg/kg	0.5		-	-	**94**	-
Zinc, Zn	mg/kg	0.5		-	-	**7400**	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
Mercury in Soil Method: AN312						
Mercury	mg/kg	0.01	-	-	**1.3**	-
Fibre Identification in soil Method: AN602						
FibreID						
Asbestos Detected	No unit	-	-	-	Yes	-
SemiQuant						
Estimated Fibres	%w/w	0.01	-	-	**>0.01**	-
Moisture Content Method: AN002						
% Moisture	%	0.5	**16**	**25**	**11**	**15**
VOCs in Water Method: AN433/AN434						
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Polycyclic VOCs						
Naphthalene	µg/L	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
Totals						
Total Xylenes	µg/L	1.5	-	-	-	-
Total BTEX	µg/L	3	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410							
TRH C6-C10	µg/L	50		-	-	-	-
TRH C6-C9	µg/L	40		-	-	-	-
Surrogates							
Dibromofluoromethane (Surrogate)	%	-		-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-		-	-	-	-
d8-toluene (Surrogate)	%	-		-	-	-	-
Bromofluorobenzene (Surrogate)	%	-		-	-	-	-
VPH F Bands							
Benzene (F0)	µg/L	0.5		-	-	-	-
TRH C6-C10 minus BTEX (F1)	µg/L	50		-	-	-	-
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403							
TRH C10-C14	µg/L	50		-	-	-	-
TRH C15-C28	µg/L	200		-	-	-	-
TRH C29-C36	µg/L	200		-	-	-	-
TRH C37-C40	µg/L	200		-	-	-	-
TRH C10-C36	µg/L	450		-	-	-	-
TRH C10-C40	µg/L	650		-	-	-	-
TRH F Bands							
TRH >C10-C16 (F2)	µg/L	60		-	-	-	-
TRH >C16-C34 (F3)	µg/L	500		-	-	-	-
TRH >C34-C40 (F4)	µg/L	500		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.013 Soil 6/6/14 11:00 BH306-4	SE128733.014 Soil 6/6/14 11:00 BH306-6	SE128733.015 Soil 6/6/14 11:00 BH307-1	SE128733.016 Soil 6/6/14 11:00 BH307-2
Trace Metals (Dissolved) in Water by ICPMS Method: AN318							
Arsenic, As	µg/L	1		-	-	-	-
Cadmium, Cd	µg/L	0.1		-	-	-	-
Chromium, Cr	µg/L	1		-	-	-	-
Copper, Cu	µg/L	1		-	-	-	-
Lead, Pb	µg/L	1		-	-	-	-
Nickel, Ni	µg/L	1		-	-	-	-
Zinc, Zn	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311/AN312							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
VOC's in Soil Method: AN433/AN434							
Fumigants							
2,2-dichloropropane	mg/kg	0.1		-	-	<0.1	-
1,2-dichloropropane	mg/kg	0.1		-	-	<0.1	-
cis-1,3-dichloropropene	mg/kg	0.1		-	-	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1		-	-	<0.1	-
1,2-dibromoethane (EDB)	mg/kg	0.1		-	-	<0.1	-
Halogenated Aliphatics							
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	-	<1	-
Chloromethane	mg/kg	1		-	-	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	-	<0.1	-
Bromomethane	mg/kg	1		-	-	<1	-
Chloroethane	mg/kg	1		-	-	<1	-
Trichlorofluoromethane	mg/kg	1		-	-	<1	-
Iodomethane	mg/kg	5		-	-	<5	-
1,1-dichloroethene	mg/kg	0.1		-	-	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	-	<0.5	-
Allyl chloride	mg/kg	0.1		-	-	<0.1	-
trans-1,2-dichloroethene	mg/kg	0.1		-	-	<0.1	-
1,1-dichloroethane	mg/kg	0.1		-	-	<0.1	-
cis-1,2-dichloroethene	mg/kg	0.1		-	-	<0.1	-
Bromochloromethane	mg/kg	0.1		-	-	<0.1	-
1,2-dichloroethane	mg/kg	0.1		-	-	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1		-	-	<0.1	-
1,1-dichloropropene	mg/kg	0.1		-	-	<0.1	-
Carbon tetrachloride	mg/kg	0.1		-	-	<0.1	-
Dibromomethane	mg/kg	0.1		-	-	<0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1		-	-	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1		-	-	<0.1	-
1,3-dichloropropane	mg/kg	0.1		-	-	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	-	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	-	<0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1		-	-	<1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	-	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1		-	-	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1		-	-	<1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	-	<0.1	-
Hexachlorobutadiene	mg/kg	0.1		-	-	<0.1	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
VOC's in Soil Method: AN433/AN434 (continued)							
Halogenated Aromatics							
Chlorobenzene	mg/kg	0.1		-	-	<0.1	-
Bromobenzene	mg/kg	0.1		-	-	<0.1	-
2-chlorotoluene	mg/kg	0.1		-	-	<0.1	-
4-chlorotoluene	mg/kg	0.1		-	-	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1		-	-	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1		-	-	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1		-	-	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1		-	-	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1		-	-	<0.1	-
Monocyclic Aromatic Hydrocarbons							
Benzene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2
Styrene (Vinyl benzene)	mg/kg	0.1		-	-	<0.1	-
o-xylene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Isopropylbenzene (Cumene)	mg/kg	0.1		-	-	<0.1	-
n-propylbenzene	mg/kg	0.1		-	-	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1		-	-	<0.1	-
tert-butylbenzene	mg/kg	0.1		-	-	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1		-	-	<0.1	-
sec-butylbenzene	mg/kg	0.1		-	-	<0.1	-
p-isopropyltoluene	mg/kg	0.1		-	-	<0.1	-
n-butylbenzene	mg/kg	0.1		-	-	<0.1	-
Nitrogenous Compounds							
Acrylonitrile	mg/kg	0.1		-	-	<0.1	-
2-nitropropane	mg/kg	10		-	-	<10	-
Oxygenated Compounds							
Acetone (2-propanone)	mg/kg	10		-	-	<10	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1		-	-	<0.1	-
Vinyl acetate	mg/kg	10		-	-	<10	-
MEK (2-butanone)	mg/kg	10		-	-	<10	-
MIBK (4-methyl-2-pentanone)	mg/kg	1		-	-	<1	-
2-hexanone (MBK)	mg/kg	5		-	-	<5	-

Parameter	Units	LOR	Sample Number: SE128733.017 Sample Matrix: Soil Sample Date: 6/6/14 11:00 Sample Name: BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
VOC's in Soil Method: AN433/AN434 (continued)						
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	-	<0.5	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**73**	**81**	**76**	**92**
d4-1,2-dichloroethane (Surrogate)	%	-	**88**	**95**	**96**	**110**
d8-toluene (Surrogate)	%	-	**94**	**107**	**89**	**114**
Bromofluorobenzene (Surrogate)	%	-	**88**	**88**	**94**	**98**
Totals						
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Total VOC*	mg/kg	24	-	-	-	-
Trihalomethanes						
Chloroform	mg/kg	0.1	-	-	<0.1	-
Bromodichloromethane	mg/kg	0.1	-	-	<0.1	-
Chlorodibromomethane	mg/kg	0.1	-	-	<0.1	-
Bromoform	mg/kg	0.1	-	-	<0.1	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410						
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**73**	**81**	**79**	**92**
d4-1,2-dichloroethane (Surrogate)	%	-	**88**	**95**	**92**	**110**
d8-toluene (Surrogate)	%	-	**94**	**107**	**95**	**114**
Bromofluorobenzene (Surrogate)	%	-	**88**	**88**	**86**	**98**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)							
VPH F Bands							
Benzene (F0)	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25		<25	<25	<25	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403							
TRH C10-C14	mg/kg	20		<20	<20	<20	<20
TRH C15-C28	mg/kg	45		<45	<45	<45	<45
TRH C29-C36	mg/kg	45		<45	<45	<45	<45
TRH C37-C40	mg/kg	100		<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110		<110	<110	<110	<110
TRH C10-C40 Total	mg/kg	210		<210	<210	<210	<210
TRH F Bands							
TRH >C10-C16 (F2)	mg/kg	25		<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90		<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120		<120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420							
Naphthalene	mg/kg	0.1		-	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1		-	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1		-	<0.1	**0.5**	<0.1
Pyrene	mg/kg	0.1		-	<0.1	**0.3**	<0.1
Benzo(a)anthracene	mg/kg	0.1		-	<0.1	**0.4**	<0.1
Chrysene	mg/kg	0.1		-	<0.1	**0.3**	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1		-	<0.1	**0.6**	<0.1
Benzo(k)fluoranthene	mg/kg	0.1		-	<0.1	**0.2**	<0.1
Benzo(a)pyrene	mg/kg	0.1		-	<0.1	**0.4**	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		-	<0.1	**0.3**	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1		-	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1		-	<0.1	**0.2**	<0.1
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2		-	<0.2	**0.6**	<0.2
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3		-	<0.3	**0.7**	<0.3
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2		-	<0.2	**0.6**	<0.2
Total PAH	mg/kg	0.8		-	<0.8	**3.2**	<0.8

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)							
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		-	**94**	**94**	**88**
2-fluorobiphenyl (Surrogate)	%	-		-	**86**	**88**	**84**
d14-p-terphenyl (Surrogate)	%	-		-	**70**	**76**	**72**
OC Pesticides in Soil Method: AN400/AN420							
Hexachlorobenzene (HCB)	mg/kg	0.1		-	<0.1	-	<0.1
Alpha BHC	mg/kg	0.1		-	<0.1	-	<0.1
Lindane	mg/kg	0.1		-	<0.1	-	<0.1
Heptachlor	mg/kg	0.1		-	<0.1	-	<0.1
Aldrin	mg/kg	0.1		-	<0.1	-	<0.1
Beta BHC	mg/kg	0.1		-	<0.1	-	<0.1
Delta BHC	mg/kg	0.1		-	<0.1	-	<0.1
Heptachlor epoxide	mg/kg	0.1		-	<0.1	-	<0.1
o,p'-DDE	mg/kg	0.1		-	<0.1	-	<0.1
Alpha Endosulfan	mg/kg	0.2		-	<0.2	-	<0.2
Gamma Chlordane	mg/kg	0.1		-	<0.1	-	<0.1
Alpha Chlordane	mg/kg	0.1		-	<0.1	-	<0.1
trans-Nonachlor	mg/kg	0.1		-	<0.1	-	<0.1
p,p'-DDE	mg/kg	0.1		-	<0.1	-	<0.1
Dieldrin	mg/kg	0.2		-	<0.2	-	<0.2
Endrin	mg/kg	0.2		-	<0.2	-	<0.2
o,p'-DDD	mg/kg	0.1		-	<0.1	-	<0.1
o,p'-DDT	mg/kg	0.1		-	<0.1	-	<0.1
Beta Endosulfan	mg/kg	0.2		-	<0.2	-	<0.2
p,p'-DDD	mg/kg	0.1		-	<0.1	-	<0.1
p,p'-DDT	mg/kg	0.1		-	<0.1	-	<0.1
Endosulfan sulphate	mg/kg	0.1		-	<0.1	-	<0.1
Endrin Aldehyde	mg/kg	0.1		-	<0.1	-	<0.1
Methoxychlor	mg/kg	0.1		-	<0.1	-	<0.1
Endrin Ketone	mg/kg	0.1		-	<0.1	-	<0.1
Isodrin	mg/kg	0.1		-	<0.1	-	<0.1
Mirex	mg/kg	0.1		-	<0.1	-	<0.1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
OC Pesticides in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	**90**	-	**93**
OP Pesticides in Soil Method: AN400/AN420							
Dichlorvos	mg/kg	0.5		-	<0.5	-	<0.5
Dimethoate	mg/kg	0.5		-	<0.5	-	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		-	<0.5	-	<0.5
Fenitrothion	mg/kg	0.2		-	<0.2	-	<0.2
Malathion	mg/kg	0.2		-	<0.2	-	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		-	<0.2	-	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		-	<0.2	-	<0.2
Bromophos Ethyl	mg/kg	0.2		-	<0.2	-	<0.2
Methidathion	mg/kg	0.5		-	<0.5	-	<0.5
Ethion	mg/kg	0.2		-	<0.2	-	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		-	<0.2	-	<0.2
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		-	**86**	-	**84**
d14-p-terphenyl (Surrogate)	%	-		-	**70**	-	**72**
PCBs in Soil Method: AN400/AN420							
Arochlor 1016	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1221	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1232	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1242	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1248	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1254	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1260	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1262	mg/kg	0.2		-	<0.2	-	<0.2
Arochlor 1268	mg/kg	0.2		-	<0.2	-	<0.2
Total PCBs (Arochlors)	mg/kg	1		-	<1	-	<1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
PCBs in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	**90**	-	**93**
Total Phenolics in Soil Method: AN289							
Total Phenols	mg/kg	0.1		-	**0.1**	**0.2**	**0.1**
pH in soil (1:5) Method: AN101							
pH	pH Units	-		-	-	-	-
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122							
Exchangeable Sodium, Na	mg/kg	2		-	-	-	-
Exchangeable Sodium, Na	meq/100g	0.01		-	-	-	-
Exchangeable Sodium Percentage*	%	0.1		-	-	-	-
Exchangeable Potassium, K	mg/kg	2		-	-	-	-
Exchangeable Potassium, K	meq/100g	0.01		-	-	-	-
Exchangeable Potassium Percentage*	%	0.1		-	-	-	-
Exchangeable Calcium, Ca	mg/kg	2		-	-	-	-
Exchangeable Calcium, Ca	meq/100g	0.01		-	-	-	-
Exchangeable Calcium Percentage*	%	0.1		-	-	-	-
Exchangeable Magnesium, Mg	mg/kg	2		-	-	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02		-	-	-	-
Exchangeable Magnesium Percentage*	%	0.1		-	-	-	-
Cation Exchange Capacity	meq/100g	0.02		-	-	-	-
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320							
Arsenic, As	mg/kg	3		**3**	<3	-	<3
Cadmium, Cd	mg/kg	0.3		**0.4**	**0.4**	-	**0.5**
Chromium, Cr	mg/kg	0.3		**10**	**9.3**	-	**14**
Copper, Cu	mg/kg	0.5		**1300**	**68**	-	**63**
Lead, Pb	mg/kg	1		**69**	**5**	-	**5**
Nickel, Ni	mg/kg	0.5		**5.3**	**51**	-	**50**
Zinc, Zn	mg/kg	0.5		**100**	**51**	-	**49**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
Mercury in Soil Method: AN312						
Mercury	mg/kg	0.01	**0.02**	<0.01	-	<0.01
Fibre Identification in soil Method: AN602						
FibreID						
Asbestos Detected	No unit	-	-	No	-	-
SemiQuant						
Estimated Fibres	%w/w	0.01	-	<0.01	-	-
Moisture Content Method: AN002						
% Moisture	%	0.5	**9.5**	**5.2**	**26**	**5.5**
VOCs in Water Method: AN433/AN434						
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Polycyclic VOCs						
Naphthalene	µg/L	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
Totals						
Total Xylenes	µg/L	1.5	-	-	-	-
Total BTEX	µg/L	3	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410							
TRH C6-C10	µg/L	50		-	-	-	-
TRH C6-C9	µg/L	40		-	-	-	-
Surrogates							
Dibromofluoromethane (Surrogate)	%	-		-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-		-	-	-	-
d8-toluene (Surrogate)	%	-		-	-	-	-
Bromofluorobenzene (Surrogate)	%	-		-	-	-	-
VPH F Bands							
Benzene (F0)	µg/L	0.5		-	-	-	-
TRH C6-C10 minus BTEX (F1)	µg/L	50		-	-	-	-
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403							
TRH C10-C14	µg/L	50		-	-	-	-
TRH C15-C28	µg/L	200		-	-	-	-
TRH C29-C36	µg/L	200		-	-	-	-
TRH C37-C40	µg/L	200		-	-	-	-
TRH C10-C36	µg/L	450		-	-	-	-
TRH C10-C40	µg/L	650		-	-	-	-
TRH F Bands							
TRH >C10-C16 (F2)	µg/L	60		-	-	-	-
TRH >C16-C34 (F3)	µg/L	500		-	-	-	-
TRH >C34-C40 (F4)	µg/L	500		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.017 Soil 6/6/14 11:00 BH307-3	SE128733.018 Soil 6/6/14 11:00 BH308-1	SE128733.019 Soil 6/6/14 11:00 BH308-3	SE128733.020 Soil 6/6/14 11:00 BH309-1
Trace Metals (Dissolved) in Water by ICPMS Method: AN318							
Arsenic, As	µg/L	1		-	-	-	-
Cadmium, Cd	µg/L	0.1		-	-	-	-
Chromium, Cr	µg/L	1		-	-	-	-
Copper, Cu	µg/L	1		-	-	-	-
Lead, Pb	µg/L	1		-	-	-	-
Nickel, Ni	µg/L	1		-	-	-	-
Zinc, Zn	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311/AN312							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
VOC's in Soil Method: AN433/AN434							
Fumigants							
2,2-dichloropropane	mg/kg	0.1		-	-	<0.1	-
1,2-dichloropropane	mg/kg	0.1		-	-	<0.1	-
cis-1,3-dichloropropene	mg/kg	0.1		-	-	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1		-	-	<0.1	-
1,2-dibromoethane (EDB)	mg/kg	0.1		-	-	<0.1	-
Halogenated Aliphatics							
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	-	<1	-
Chloromethane	mg/kg	1		-	-	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	-	<0.1	-
Bromomethane	mg/kg	1		-	-	<1	-
Chloroethane	mg/kg	1		-	-	<1	-
Trichlorofluoromethane	mg/kg	1		-	-	<1	-
Iodomethane	mg/kg	5		-	-	<5	-
1,1-dichloroethene	mg/kg	0.1		-	-	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	-	<0.5	-
Allyl chloride	mg/kg	0.1		-	-	<0.1	-
trans-1,2-dichloroethene	mg/kg	0.1		-	-	<0.1	-
1,1-dichloroethane	mg/kg	0.1		-	-	<0.1	-
cis-1,2-dichloroethene	mg/kg	0.1		-	-	<0.1	-
Bromochloromethane	mg/kg	0.1		-	-	<0.1	-
1,2-dichloroethane	mg/kg	0.1		-	-	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1		-	-	<0.1	-
1,1-dichloropropene	mg/kg	0.1		-	-	<0.1	-
Carbon tetrachloride	mg/kg	0.1		-	-	<0.1	-
Dibromomethane	mg/kg	0.1		-	-	<0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1		-	-	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1		-	-	<0.1	-
1,3-dichloropropane	mg/kg	0.1		-	-	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	-	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	-	<0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1		-	-	<1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	-	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1		-	-	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1		-	-	<1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	-	<0.1	-
Hexachlorobutadiene	mg/kg	0.1		-	-	<0.1	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
VOC's in Soil Method: AN433/AN434 (continued)						
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	-	-	<0.1	-
Bromobenzene	mg/kg	0.1	-	-	<0.1	-
2-chlorotoluene	mg/kg	0.1	-	-	<0.1	-
4-chlorotoluene	mg/kg	0.1	-	-	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	<0.1	-
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	-
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	-
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	-
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	<0.1	-
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	<0.1	-
n-propylbenzene	mg/kg	0.1	-	-	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	<0.1	-
tert-butylbenzene	mg/kg	0.1	-	-	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	<0.1	-
sec-butylbenzene	mg/kg	0.1	-	-	<0.1	-
p-isopropyltoluene	mg/kg	0.1	-	-	<0.1	-
n-butylbenzene	mg/kg	0.1	-	-	<0.1	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	-	-	<0.1	-
2-nitropropane	mg/kg	10	-	-	<10	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	-	-	<10	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	<0.1	-
Vinyl acetate	mg/kg	10	-	-	<10	-
MEK (2-butanone)	mg/kg	10	-	-	<10	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	<1	-
2-hexanone (MBK)	mg/kg	5	-	-	<5	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
VOC's in Soil Method: AN433/AN434 (continued)						
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	-
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	-	<0.5	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**73**	**77**	**72**	-
d4-1,2-dichloroethane (Surrogate)	%	-	**89**	**93**	**91**	-
d8-toluene (Surrogate)	%	-	**94**	**93**	**83**	-
Bromofluorobenzene (Surrogate)	%	-	**78**	**84**	**85**	-
Totals						
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	-
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	-
Total VOC*	mg/kg	24	-	-	-	-
Trihalomethanes						
Chloroform	mg/kg	0.1	-	-	<0.1	-
Bromodichloromethane	mg/kg	0.1	-	-	<0.1	-
Chlorodibromomethane	mg/kg	0.1	-	-	<0.1	-
Bromoform	mg/kg	0.1	-	-	<0.1	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410						
TRH C6-C10	mg/kg	25	<25	<25	<25	-
TRH C6-C9	mg/kg	20	<20	<20	<20	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**73**	**77**	**73**	-
d4-1,2-dichloroethane (Surrogate)	%	-	**89**	**93**	**87**	-
d8-toluene (Surrogate)	%	-	**94**	**93**	**88**	-
Bromofluorobenzene (Surrogate)	%	-	**78**	**84**	**83**	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)						
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	-
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	-
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403						
TRH C10-C14	mg/kg	20	<20	<20	<20	-
TRH C15-C28	mg/kg	45	<45	<45	<45	-
TRH C29-C36	mg/kg	45	<45	<45	<45	-
TRH C37-C40	mg/kg	100	<100	<100	<100	-
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	-
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	-
TRH F Bands						
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	-
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	-
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	-
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2
Total PAH	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)							
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		**92**	**88**	**90**	**86**
2-fluorobiphenyl (Surrogate)	%	-		**90**	**84**	**84**	**82**
d14-p-terphenyl (Surrogate)	%	-		**80**	**74**	**74**	**74**
OC Pesticides in Soil Method: AN400/AN420							
Hexachlorobenzene (HCB)	mg/kg	0.1		-	-	<0.1	<0.1
Alpha BHC	mg/kg	0.1		-	-	<0.1	<0.1
Lindane	mg/kg	0.1		-	-	<0.1	<0.1
Heptachlor	mg/kg	0.1		-	-	<0.1	<0.1
Aldrin	mg/kg	0.1		-	-	<0.1	<0.1
Beta BHC	mg/kg	0.1		-	-	<0.1	<0.1
Delta BHC	mg/kg	0.1		-	-	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1		-	-	<0.1	<0.1
o,p'-DDE	mg/kg	0.1		-	-	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2		-	-	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1		-	-	**0.3**	<0.1
Alpha Chlordane	mg/kg	0.1		-	-	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1		-	-	<0.1	<0.1
p,p'-DDE	mg/kg	0.1		-	-	<0.1	<0.1
Dieldrin	mg/kg	0.2		-	-	<0.2	<0.2
Endrin	mg/kg	0.2		-	-	<0.2	<0.2
o,p'-DDD	mg/kg	0.1		-	-	<0.1	<0.1
o,p'-DDT	mg/kg	0.1		-	-	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2		-	-	<0.2	<0.2
p,p'-DDD	mg/kg	0.1		-	-	<0.1	<0.1
p,p'-DDT	mg/kg	0.1		-	-	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1		-	-	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1		-	-	<0.1	<0.1
Methoxychlor	mg/kg	0.1		-	-	<0.1	<0.1
Endrin Ketone	mg/kg	0.1		-	-	<0.1	<0.1
Isodrin	mg/kg	0.1		-	-	<0.1	<0.1
Mirex	mg/kg	0.1		-	-	<0.1	<0.1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
OC Pesticides in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	-	**70**	**121**
OP Pesticides in Soil Method: AN400/AN420							
Dichlorvos	mg/kg	0.5		-	-	<0.5	<0.5
Dimethoate	mg/kg	0.5		-	-	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5		-	-	<0.5	<0.5
Fenitrothion	mg/kg	0.2		-	-	<0.2	<0.2
Malathion	mg/kg	0.2		-	-	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		-	-	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2		-	-	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2		-	-	<0.2	<0.2
Methidathion	mg/kg	0.5		-	-	<0.5	<0.5
Ethion	mg/kg	0.2		-	-	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2		-	-	<0.2	<0.2
Surrogates							
2-fluorobiphenyl (Surrogate)	%	-		-	-	**90**	**82**
d14-p-terphenyl (Surrogate)	%	-		-	-	**80**	**74**
PCBs in Soil Method: AN400/AN420							
Arochlor 1016	mg/kg	0.2		-	-	<0.2	<0.2
Arochlor 1221	mg/kg	0.2		-	-	<0.2	<0.2
Arochlor 1232	mg/kg	0.2		-	-	<0.2	<0.2
Arochlor 1242	mg/kg	0.2		-	-	<0.2	<0.2
Arochlor 1248	mg/kg	0.2		-	-	<0.2	<0.2
Arochlor 1254	mg/kg	0.2		-	-	<0.2	<0.2
Arochlor 1260	mg/kg	0.2		-	-	<0.2	<0.2
Arochlor 1262	mg/kg	0.2		-	-	<0.2	<0.2
Arochlor 1268	mg/kg	0.2		-	-	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1		-	-	<1	<1

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
PCBs in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	-	**70**	**121**
Total Phenolics in Soil Method: AN289							
Total Phenols	mg/kg	0.1		-	-	-	-
pH in soil (1:5) Method: AN101							
pH	pH Units	-		-	-	-	-
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122							
Exchangeable Sodium, Na	mg/kg	2		-	-	-	-
Exchangeable Sodium, Na	meq/100g	0.01		-	-	-	-
Exchangeable Sodium Percentage*	%	0.1		-	-	-	-
Exchangeable Potassium, K	mg/kg	2		-	-	-	-
Exchangeable Potassium, K	meq/100g	0.01		-	-	-	-
Exchangeable Potassium Percentage*	%	0.1		-	-	-	-
Exchangeable Calcium, Ca	mg/kg	2		-	-	-	-
Exchangeable Calcium, Ca	meq/100g	0.01		-	-	-	-
Exchangeable Calcium Percentage*	%	0.1		-	-	-	-
Exchangeable Magnesium, Mg	mg/kg	2		-	-	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02		-	-	-	-
Exchangeable Magnesium Percentage*	%	0.1		-	-	-	-
Cation Exchange Capacity	meq/100g	0.02		-	-	-	-
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320							
Arsenic, As	mg/kg	3		-	<3	**3**	<3
Cadmium, Cd	mg/kg	0.3		-	**1.1**	<0.3	<0.3
Chromium, Cr	mg/kg	0.3		-	**30**	**6.4**	**4.1**
Copper, Cu	mg/kg	0.5		-	**500**	**77**	**21**
Lead, Pb	mg/kg	1		-	**130**	**70**	**20**
Nickel, Ni	mg/kg	0.5		-	**29**	**2.6**	**1.0**
Zinc, Zn	mg/kg	0.5		-	**270**	**72**	**23**

Parameter	Units	LOR	Sample Number: SE128733.021 Sample Matrix: Soil Sample Date: 6/6/14 11:00 Sample Name: BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
Mercury in Soil Method: AN312						
Mercury	mg/kg	0.01	-	**0.05**	**0.16**	**0.07**
Fibre Identification in soil Method: AN602						
FibreID						
Asbestos Detected	No unit	-	-	-	No	-
SemiQuant						
Estimated Fibres	%w/w	0.01	-	-	<0.01	-
Moisture Content Method: AN002						
% Moisture	%	0.5	**9.5**	**16**	**23**	**19**
VOCs in Water Method: AN433/AN434						
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Polycyclic VOCs						
Naphthalene	µg/L	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
Totals						
Total Xylenes	µg/L	1.5	-	-	-	-
Total BTEX	µg/L	3	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410							
TRH C6-C10	µg/L	50		-	-	-	-
TRH C6-C9	µg/L	40		-	-	-	-
Surrogates							
Dibromofluoromethane (Surrogate)	%	-		-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-		-	-	-	-
d8-toluene (Surrogate)	%	-		-	-	-	-
Bromofluorobenzene (Surrogate)	%	-		-	-	-	-
VPH F Bands							
Benzene (F0)	µg/L	0.5		-	-	-	-
TRH C6-C10 minus BTEX (F1)	µg/L	50		-	-	-	-
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403							
TRH C10-C14	µg/L	50		-	-	-	-
TRH C15-C28	µg/L	200		-	-	-	-
TRH C29-C36	µg/L	200		-	-	-	-
TRH C37-C40	µg/L	200		-	-	-	-
TRH C10-C36	µg/L	450		-	-	-	-
TRH C10-C40	µg/L	650		-	-	-	-
TRH F Bands							
TRH >C10-C16 (F2)	µg/L	60		-	-	-	-
TRH >C16-C34 (F3)	µg/L	500		-	-	-	-
TRH >C34-C40 (F4)	µg/L	500		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.021 Soil 6/6/14 11:00 BH309-3	SE128733.022 Soil 10/6/14 11:00 BH310-1	SE128733.023 Soil 10/6/14 11:00 BH311-1	SE128733.024 Soil 10/6/14 11:00 BH311-2
Trace Metals (Dissolved) in Water by ICPMS Method: AN318							
Arsenic, As	µg/L	1		-	-	-	-
Cadmium, Cd	µg/L	0.1		-	-	-	-
Chromium, Cr	µg/L	1		-	-	-	-
Copper, Cu	µg/L	1		-	-	-	-
Lead, Pb	µg/L	1		-	-	-	-
Nickel, Ni	µg/L	1		-	-	-	-
Zinc, Zn	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311/AN312							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
VOC's in Soil Method: AN433/AN434							
Fumigants							
2,2-dichloropropane	mg/kg	0.1		-	-	-	-
1,2-dichloropropane	mg/kg	0.1		-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1		-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1		-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1		-	-	-	-
Halogenated Aliphatics							
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	-	-	-
Chloromethane	mg/kg	1		-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	-	-	-
Bromomethane	mg/kg	1		-	-	-	-
Chloroethane	mg/kg	1		-	-	-	-
Trichlorofluoromethane	mg/kg	1		-	-	-	-
Iodomethane	mg/kg	5		-	-	-	-
1,1-dichloroethene	mg/kg	0.1		-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	-	-	-
Allyl chloride	mg/kg	0.1		-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1		-	-	-	-
1,1-dichloroethane	mg/kg	0.1		-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1		-	-	-	-
Bromochloromethane	mg/kg	0.1		-	-	-	-
1,2-dichloroethane	mg/kg	0.1		-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1		-	-	-	-
1,1-dichloropropene	mg/kg	0.1		-	-	-	-
Carbon tetrachloride	mg/kg	0.1		-	-	-	-
Dibromomethane	mg/kg	0.1		-	-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1		-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1		-	-	-	-
1,3-dichloropropane	mg/kg	0.1		-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1		-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1		-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1		-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	-	-	-
Hexachlorobutadiene	mg/kg	0.1		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
VOC's in Soil Method: AN433/AN434 (continued)						
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	-	-	-	-
Bromobenzene	mg/kg	0.1	-	-	-	-
2-chlorotoluene	mg/kg	0.1	-	-	-	-
4-chlorotoluene	mg/kg	0.1	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-	-
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-	-
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-	-
n-propylbenzene	mg/kg	0.1	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-	-
tert-butylbenzene	mg/kg	0.1	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	-	-	-	-
2-nitropropane	mg/kg	10	-	-	-	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	-
Vinyl acetate	mg/kg	10	-	-	-	-
MEK (2-butanone)	mg/kg	10	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
VOC's in Soil Method: AN433/AN434 (continued)						
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**82**	**74**	**75**	**74**
d4-1,2-dichloroethane (Surrogate)	%	-	**100**	**91**	**91**	**89**
d8-toluene (Surrogate)	%	-	**101**	**96**	**96**	**96**
Bromofluorobenzene (Surrogate)	%	-	**88**	**92**	**85**	**92**
Totals						
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Total VOC*	mg/kg	24	-	-	-	-
Trihalomethanes						
Chloroform	mg/kg	0.1	-	-	-	-
Bromodichloromethane	mg/kg	0.1	-	-	-	-
Chlorodibromomethane	mg/kg	0.1	-	-	-	-
Bromoform	mg/kg	0.1	-	-	-	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410						
TRH C6-C10	mg/kg	25	<25	<25	<25	<25
TRH C6-C9	mg/kg	20	<20	<20	<20	<20
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**82**	**74**	**75**	**74**
d4-1,2-dichloroethane (Surrogate)	%	-	**100**	**91**	**91**	**89**
d8-toluene (Surrogate)	%	-	**101**	**96**	**96**	**96**
Bromofluorobenzene (Surrogate)	%	-	**88**	**92**	**85**	**92**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)							
VPH F Bands							
Benzene (F0)	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
TRH C6-C10 minus BTEX (F1)	mg/kg	25		<25	<25	<25	<25
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403							
TRH C10-C14	mg/kg	20		<20	**21**	**79**	<20
TRH C15-C28	mg/kg	45		<45	**410**	**530**	<45
TRH C29-C36	mg/kg	45		<45	**150**	**50**	<45
TRH C37-C40	mg/kg	100		<100	<100	<100	<100
TRH C10-C36 Total	mg/kg	110		<110	**580**	**660**	<110
TRH C10-C40 Total	mg/kg	210		<210	**580**	**660**	<210
TRH F Bands							
TRH >C10-C16 (F2)	mg/kg	25		<25	**29**	**160**	<25
TRH >C16-C34 (F3)	mg/kg	90		<90	**540**	**490**	<90
TRH >C34-C40 (F4)	mg/kg	120		<120	<120	<120	<120
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420							
Naphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1		<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2		<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3		<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2		<0.2	<0.2	<0.2	<0.2
Total PAH	mg/kg	0.8		<0.8	<0.8	<0.8	<0.8

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)							
Surrogates							
d5-nitrobenzene (Surrogate)	%	-		**88**	**94**	**96**	**94**
2-fluorobiphenyl (Surrogate)	%	-		**82**	**90**	**82**	**86**
d14-p-terphenyl (Surrogate)	%	-		**76**	**88**	**84**	**74**
OC Pesticides in Soil Method: AN400/AN420							
Hexachlorobenzene (HCB)	mg/kg	0.1		<0.1	<0.1	-	-
Alpha BHC	mg/kg	0.1		<0.1	<0.1	-	-
Lindane	mg/kg	0.1		<0.1	<0.1	-	-
Heptachlor	mg/kg	0.1		<0.1	<0.1	-	-
Aldrin	mg/kg	0.1		<0.1	<0.1	-	-
Beta BHC	mg/kg	0.1		<0.1	<0.1	-	-
Delta BHC	mg/kg	0.1		<0.1	<0.1	-	-
Heptachlor epoxide	mg/kg	0.1		<0.1	<0.1	-	-
o,p'-DDE	mg/kg	0.1		<0.1	<0.1	-	-
Alpha Endosulfan	mg/kg	0.2		<0.2	<0.2	-	-
Gamma Chlordane	mg/kg	0.1		<0.1	<0.1	-	-
Alpha Chlordane	mg/kg	0.1		<0.1	<0.1	-	-
trans-Nonachlor	mg/kg	0.1		<0.1	<0.1	-	-
p,p'-DDE	mg/kg	0.1		<0.1	<0.1	-	-
Dieldrin	mg/kg	0.2		<0.2	<0.2	-	-
Endrin	mg/kg	0.2		<0.2	<0.2	-	-
o,p'-DDD	mg/kg	0.1		<0.1	<0.1	-	-
o,p'-DDT	mg/kg	0.1		<0.1	<0.1	-	-
Beta Endosulfan	mg/kg	0.2		<0.2	<0.2	-	-
p,p'-DDD	mg/kg	0.1		<0.1	<0.1	-	-
p,p'-DDT	mg/kg	0.1		<0.1	<0.1	-	-
Endosulfan sulphate	mg/kg	0.1		<0.1	<0.1	-	-
Endrin Aldehyde	mg/kg	0.1		<0.1	<0.1	-	-
Methoxychlor	mg/kg	0.1		<0.1	<0.1	-	-
Endrin Ketone	mg/kg	0.1		<0.1	<0.1	-	-
Isodrin	mg/kg	0.1		<0.1	<0.1	-	-
Mirex	mg/kg	0.1		<0.1	<0.1	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
OC Pesticides in Soil Method: AN400/AN420 (continued)						
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**122**	**115**	-	-
OP Pesticides in Soil Method: AN400/AN420						
Dichlorvos	mg/kg	0.5	<0.5	<0.5	-	-
Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	-	-
Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
Malathion	mg/kg	0.2	<0.2	<0.2	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
Ethion	mg/kg	0.2	<0.2	<0.2	-	-
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	**82**	**90**	-	-
d14-p-terphenyl (Surrogate)	%	-	**76**	**88**	-	-
PCBs in Soil Method: AN400/AN420						
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	-	-
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	-	-
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	-	-
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	-	-
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	-	-
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	-	-
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	-	-
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	-	-
Total PCBs (Arochlors)	mg/kg	1	<1	<1	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
PCBs in Soil Method: AN400/AN420 (continued)							
Surrogates							
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		**122**	**115**	-	-
Total Phenolics in Soil Method: AN289							
Total Phenols	mg/kg	0.1		-	-	-	**0.2**
pH in soil (1:5) Method: AN101							
pH	pH Units	-		-	-	-	-
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122							
Exchangeable Sodium, Na	mg/kg	2		-	-	-	-
Exchangeable Sodium, Na	meq/100g	0.01		-	-	-	-
Exchangeable Sodium Percentage*	%	0.1		-	-	-	-
Exchangeable Potassium, K	mg/kg	2		-	-	-	-
Exchangeable Potassium, K	meq/100g	0.01		-	-	-	-
Exchangeable Potassium Percentage*	%	0.1		-	-	-	-
Exchangeable Calcium, Ca	mg/kg	2		-	-	-	-
Exchangeable Calcium, Ca	meq/100g	0.01		-	-	-	-
Exchangeable Calcium Percentage*	%	0.1		-	-	-	-
Exchangeable Magnesium, Mg	mg/kg	2		-	-	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02		-	-	-	-
Exchangeable Magnesium Percentage*	%	0.1		-	-	-	-
Cation Exchange Capacity	meq/100g	0.02		-	-	-	-
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320							
Arsenic, As	mg/kg	3		**3**	**8**	-	<3
Cadmium, Cd	mg/kg	0.3		<0.3	**2.4**	-	<0.3
Chromium, Cr	mg/kg	0.3		**13**	**56**	-	**7.0**
Copper, Cu	mg/kg	0.5		**80**	**1800**	-	**110**
Lead, Pb	mg/kg	1		**65**	**710**	-	**250**
Nickel, Ni	mg/kg	0.5		**4.1**	**32**	-	**2.5**
Zinc, Zn	mg/kg	0.5		**67**	**1600**	-	**300**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
Mercury in Soil Method: AN312						
Mercury	mg/kg	0.01	**0.12**	**0.87**	-	**0.13**
Fibre Identification in soil Method: AN602						
FibreID						
Asbestos Detected	No unit	-	No	No	-	No
SemiQuant						
Estimated Fibres	%w/w	0.01	<0.01	<0.01	-	<0.01
Moisture Content Method: AN002						
% Moisture	%	0.5	**18**	**17**	**14**	**14**
VOCs in Water Method: AN433/AN434						
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	-	-	-	-
Toluene	µg/L	0.5	-	-	-	-
Ethylbenzene	µg/L	0.5	-	-	-	-
m/p-xylene	µg/L	1	-	-	-	-
o-xylene	µg/L	0.5	-	-	-	-
Polycyclic VOCs						
Naphthalene	µg/L	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	-
d8-toluene (Surrogate)	%	-	-	-	-	-
Bromofluorobenzene (Surrogate)	%	-	-	-	-	-
Totals						
Total Xylenes	µg/L	1.5	-	-	-	-
Total BTEX	µg/L	3	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410							
TRH C6-C10	µg/L	50		-	-	-	-
TRH C6-C9	µg/L	40		-	-	-	-
Surrogates							
Dibromofluoromethane (Surrogate)	%	-		-	-	-	-
d4-1,2-dichloroethane (Surrogate)	%	-		-	-	-	-
d8-toluene (Surrogate)	%	-		-	-	-	-
Bromofluorobenzene (Surrogate)	%	-		-	-	-	-
VPH F Bands							
Benzene (F0)	µg/L	0.5		-	-	-	-
TRH C6-C10 minus BTEX (F1)	µg/L	50		-	-	-	-
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403							
TRH C10-C14	µg/L	50		-	-	-	-
TRH C15-C28	µg/L	200		-	-	-	-
TRH C29-C36	µg/L	200		-	-	-	-
TRH C37-C40	µg/L	200		-	-	-	-
TRH C10-C36	µg/L	450		-	-	-	-
TRH C10-C40	µg/L	650		-	-	-	-
TRH F Bands							
TRH >C10-C16 (F2)	µg/L	60		-	-	-	-
TRH >C16-C34 (F3)	µg/L	500		-	-	-	-
TRH >C34-C40 (F4)	µg/L	500		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.025 Soil 10/6/14 11:00 BH312-1	SE128733.026 Soil 10/6/14 11:00 BH313-1	SE128733.027 Soil 10/6/14 11:00 BH313-3	SE128733.028 Soil 10/6/14 11:00 BH314-1
Trace Metals (Dissolved) in Water by ICPMS Method: AN318							
Arsenic, As	µg/L	1		-	-	-	-
Cadmium, Cd	µg/L	0.1		-	-	-	-
Chromium, Cr	µg/L	1		-	-	-	-
Copper, Cu	µg/L	1		-	-	-	-
Lead, Pb	µg/L	1		-	-	-	-
Nickel, Ni	µg/L	1		-	-	-	-
Zinc, Zn	µg/L	5		-	-	-	-
Mercury (dissolved) in Water Method: AN311/AN312							
Mercury	mg/L	0.0001		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
VOC's in Soil Method: AN433/AN434						
Fumigants						
2,2-dichloropropane	mg/kg	0.1	-	-	-	-
1,2-dichloropropane	mg/kg	0.1	-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	-	-
Halogenated Aliphatics						
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	-	-
Chloromethane	mg/kg	1	-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	-	-
Bromomethane	mg/kg	1	-	-	-	-
Chloroethane	mg/kg	1	-	-	-	-
Trichlorofluoromethane	mg/kg	1	-	-	-	-
Iodomethane	mg/kg	5	-	-	-	-
1,1-dichloroethene	mg/kg	0.1	-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	-	-
Allyl chloride	mg/kg	0.1	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-	-	-
1,1-dichloroethane	mg/kg	0.1	-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-	-	-
Bromochloromethane	mg/kg	0.1	-	-	-	-
1,2-dichloroethane	mg/kg	0.1	-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	-	-	-
1,1-dichloropropene	mg/kg	0.1	-	-	-	-
Carbon tetrachloride	mg/kg	0.1	-	-	-	-
Dibromomethane	mg/kg	0.1	-	-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	-	-	-
1,3-dichloropropane	mg/kg	0.1	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1	-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
VOC's in Soil Method: AN433/AN434 (continued)						
Halogenated Aromatics						
Chlorobenzene	mg/kg	0.1	-	-	-	-
Bromobenzene	mg/kg	0.1	-	-	-	-
2-chlorotoluene	mg/kg	0.1	-	-	-	-
4-chlorotoluene	mg/kg	0.1	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-	-
Monocyclic Aromatic Hydrocarbons						
Benzene	mg/kg	0.1	<0.1	<0.1	[63%]	-
Toluene	mg/kg	0.1	<0.1	<0.1	[70%]	-
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	[76%]	-
m/p-xylene	mg/kg	0.2	<0.2	<0.2	[77%]	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-	-
o-xylene	mg/kg	0.1	<0.1	<0.1	[76%]	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-	-
n-propylbenzene	mg/kg	0.1	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-	-
tert-butylbenzene	mg/kg	0.1	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-	-
Nitrogenous Compounds						
Acrylonitrile	mg/kg	0.1	-	-	-	-
2-nitropropane	mg/kg	10	-	-	-	-
Oxygenated Compounds						
Acetone (2-propanone)	mg/kg	10	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	-
Vinyl acetate	mg/kg	10	-	-	-	-
MEK (2-butanone)	mg/kg	10	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-	-

Parameter	Units	LOR	Sample Number: SE128733.029 Sample Matrix: Soil Sample Date: 10/6/14 11:00 Sample Name: BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
VOC's in Soil Method: AN433/AN434 (continued)						
Polycyclic VOCs						
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	-
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5	-	-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**84**	**85**	**89**	-
d4-1,2-dichloroethane (Surrogate)	%	-	**80**	**99**	**102**	-
d8-toluene (Surrogate)	%	-	**82**	**115**	**118**	-
Bromofluorobenzene (Surrogate)	%	-	**78**	**94**	**122**	-
Totals						
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	-	-
Total BTEX*	mg/kg	0.6	<0.6	<0.6	-	-
Total VOC*	mg/kg	24	-	-	-	-
Trihalomethanes						
Chloroform	mg/kg	0.1	-	-	-	-
Bromodichloromethane	mg/kg	0.1	-	-	-	-
Chlorodibromomethane	mg/kg	0.1	-	-	-	-
Bromoform	mg/kg	0.1	-	-	-	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410						
TRH C6-C10	mg/kg	25	<25	<25	-	-
TRH C6-C9	mg/kg	20	<20	<20	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	**84**	**85**	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	**80**	**99**	-	-
d8-toluene (Surrogate)	%	-	**82**	**115**	-	-
Bromofluorobenzene (Surrogate)	%	-	**78**	**94**	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)						
VPH F Bands						
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	-	-
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	-	-
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403						
TRH C10-C14	mg/kg	20	<20	-	-	-
TRH C15-C28	mg/kg	45	<45	-	-	-
TRH C29-C36	mg/kg	45	<45	-	-	-
TRH C37-C40	mg/kg	100	<100	-	-	-
TRH C10-C36 Total	mg/kg	110	<110	-	-	-
TRH C10-C40 Total	mg/kg	210	<210	-	-	-
TRH F Bands						
TRH >C10-C16 (F2)	mg/kg	25	<25	-	-	-
TRH >C16-C34 (F3)	mg/kg	90	<90	-	-	-
TRH >C34-C40 (F4)	mg/kg	120	<120	-	-	-
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420						
Naphthalene	mg/kg	0.1	<0.1	-	-	-
2-methylnaphthalene	mg/kg	0.1	<0.1	-	-	-
1-methylnaphthalene	mg/kg	0.1	<0.1	-	-	-
Acenaphthylene	mg/kg	0.1	<0.1	-	-	-
Acenaphthene	mg/kg	0.1	<0.1	-	-	-
Fluorene	mg/kg	0.1	<0.1	-	-	-
Phenanthrene	mg/kg	0.1	<0.1	-	-	-
Anthracene	mg/kg	0.1	<0.1	-	-	-
Fluoranthene	mg/kg	0.1	<0.1	-	-	-
Pyrene	mg/kg	0.1	<0.1	-	-	-
Benzo(a)anthracene	mg/kg	0.1	<0.1	-	-	-
Chrysene	mg/kg	0.1	<0.1	-	-	-
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	-	-	-
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	-	-	-
Benzo(a)pyrene	mg/kg	0.1	<0.1	-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	-	-	-
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	-	-	-
Benzo(ghi)perylene	mg/kg	0.1	<0.1	-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2	<0.2	-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	-	-	-
Total PAH	mg/kg	0.8	<0.8	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)						
Surrogates						
d5-nitrobenzene (Surrogate)	%	-	**92**	-	-	-
2-fluorobiphenyl (Surrogate)	%	-	**84**	-	-	-
d14-p-terphenyl (Surrogate)	%	-	**80**	-	-	-
OC Pesticides in Soil Method: AN400/AN420						
Hexachlorobenzene (HCB)	mg/kg	0.1	-	-	-	-
Alpha BHC	mg/kg	0.1	-	-	-	-
Lindane	mg/kg	0.1	-	-	-	-
Heptachlor	mg/kg	0.1	-	-	-	-
Aldrin	mg/kg	0.1	-	-	-	-
Beta BHC	mg/kg	0.1	-	-	-	-
Delta BHC	mg/kg	0.1	-	-	-	-
Heptachlor epoxide	mg/kg	0.1	-	-	-	-
o,p'-DDE	mg/kg	0.1	-	-	-	-
Alpha Endosulfan	mg/kg	0.2	-	-	-	-
Gamma Chlordane	mg/kg	0.1	-	-	-	-
Alpha Chlordane	mg/kg	0.1	-	-	-	-
trans-Nonachlor	mg/kg	0.1	-	-	-	-
p,p'-DDE	mg/kg	0.1	-	-	-	-
Dieldrin	mg/kg	0.2	-	-	-	-
Endrin	mg/kg	0.2	-	-	-	-
o,p'-DDD	mg/kg	0.1	-	-	-	-
o,p'-DDT	mg/kg	0.1	-	-	-	-
Beta Endosulfan	mg/kg	0.2	-	-	-	-
p,p'-DDD	mg/kg	0.1	-	-	-	-
p,p'-DDT	mg/kg	0.1	-	-	-	-
Endosulfan sulphate	mg/kg	0.1	-	-	-	-
Endrin Aldehyde	mg/kg	0.1	-	-	-	-
Methoxychlor	mg/kg	0.1	-	-	-	-
Endrin Ketone	mg/kg	0.1	-	-	-	-
Isodrin	mg/kg	0.1	-	-	-	-
Mirex	mg/kg	0.1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
OC Pesticides in Soil Method: AN400/AN420 (continued)						
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-	-
OP Pesticides in Soil Method: AN400/AN420						
Dichlorvos	mg/kg	0.5	-	-	-	-
Dimethoate	mg/kg	0.5	-	-	-	-
Diazinon (Dimpylate)	mg/kg	0.5	-	-	-	-
Fenitrothion	mg/kg	0.2	-	-	-	-
Malathion	mg/kg	0.2	-	-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	-	-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2	-	-	-	-
Bromophos Ethyl	mg/kg	0.2	-	-	-	-
Methidathion	mg/kg	0.5	-	-	-	-
Ethion	mg/kg	0.2	-	-	-	-
Azinphos-methyl (Guthion)	mg/kg	0.2	-	-	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-	-	-	-	-
d14-p-terphenyl (Surrogate)	%	-	-	-	-	-
PCBs in Soil Method: AN400/AN420						
Arochlor 1016	mg/kg	0.2	-	-	-	-
Arochlor 1221	mg/kg	0.2	-	-	-	-
Arochlor 1232	mg/kg	0.2	-	-	-	-
Arochlor 1242	mg/kg	0.2	-	-	-	-
Arochlor 1248	mg/kg	0.2	-	-	-	-
Arochlor 1254	mg/kg	0.2	-	-	-	-
Arochlor 1260	mg/kg	0.2	-	-	-	-
Arochlor 1262	mg/kg	0.2	-	-	-	-
Arochlor 1268	mg/kg	0.2	-	-	-	-
Total PCBs (Arochlors)	mg/kg	1	-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
PCBs in Soil Method: AN400/AN420 (continued)						
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	-	-	-	-
Total Phenolics in Soil Method: AN289						
Total Phenols	mg/kg	0.1	-	-	-	-
pH in soil (1:5) Method: AN101						
pH	pH Units	-	-	-	-	-
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122						
Exchangeable Sodium, Na	mg/kg	2	-	-	-	-
Exchangeable Sodium, Na	meq/100g	0.01	-	-	-	-
Exchangeable Sodium Percentage*	%	0.1	-	-	-	-
Exchangeable Potassium, K	mg/kg	2	-	-	-	-
Exchangeable Potassium, K	meq/100g	0.01	-	-	-	-
Exchangeable Potassium Percentage*	%	0.1	-	-	-	-
Exchangeable Calcium, Ca	mg/kg	2	-	-	-	-
Exchangeable Calcium, Ca	meq/100g	0.01	-	-	-	-
Exchangeable Calcium Percentage*	%	0.1	-	-	-	-
Exchangeable Magnesium, Mg	mg/kg	2	-	-	-	-
Exchangeable Magnesium, Mg	meq/100g	0.02	-	-	-	-
Exchangeable Magnesium Percentage*	%	0.1	-	-	-	-
Cation Exchange Capacity	meq/100g	0.02	-	-	-	-
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320						
Arsenic, As	mg/kg	3	**4**	-	-	-
Cadmium, Cd	mg/kg	0.3	<0.3	-	-	-
Chromium, Cr	mg/kg	0.3	**6.6**	-	-	-
Copper, Cu	mg/kg	0.5	**13**	-	-	-
Lead, Pb	mg/kg	1	**22**	-	-	-
Nickel, Ni	mg/kg	0.5	**1.9**	-	-	-
Zinc, Zn	mg/kg	0.5	**24**	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
Mercury in Soil Method: AN312						
Mercury	mg/kg	0.01	**0.02**	-	-	-
Fibre Identification in soil Method: AN602						
FibreID						
Asbestos Detected	No unit	-	-	-	-	-
SemiQuant						
Estimated Fibres	%w/w	0.01	-	-	-	-
Moisture Content Method: AN002						
% Moisture	%	0.5	**24**	<0.5	-	-
VOCs in Water Method: AN433/AN434						
Monocyclic Aromatic Hydrocarbons						
Benzene	µg/L	0.5	-	-	-	<0.5
Toluene	µg/L	0.5	-	-	-	<0.5
Ethylbenzene	µg/L	0.5	-	-	-	<0.5
m/p-xylene	µg/L	1	-	-	-	<1
o-xylene	µg/L	0.5	-	-	-	<0.5
Polycyclic VOCs						
Naphthalene	µg/L	0.5	-	-	-	<0.5
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	**93**
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	**111**
d8-toluene (Surrogate)	%	-	-	-	-	**101**
Bromofluorobenzene (Surrogate)	%	-	-	-	-	**87**
Totals						
Total Xylenes	µg/L	1.5	-	-	-	<1.5
Total BTEX	µg/L	3	-	-	-	<3

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410						
TRH C6-C10	µg/L	50	-	-	-	<50
TRH C6-C9	µg/L	40	-	-	-	<40
Surrogates						
Dibromofluoromethane (Surrogate)	%	-	-	-	-	**93**
d4-1,2-dichloroethane (Surrogate)	%	-	-	-	-	**111**
d8-toluene (Surrogate)	%	-	-	-	-	**101**
Bromofluorobenzene (Surrogate)	%	-	-	-	-	**87**
VPH F Bands						
Benzene (F0)	µg/L	0.5	-	-	-	<0.5
TRH C6-C10 minus BTEX (F1)	µg/L	50	-	-	-	<50
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403						
TRH C10-C14	µg/L	50	-	-	-	<50
TRH C15-C28	µg/L	200	-	-	-	<200
TRH C29-C36	µg/L	200	-	-	-	<200
TRH C37-C40	µg/L	200	-	-	-	<200
TRH C10-C36	µg/L	450	-	-	-	<450
TRH C10-C40	µg/L	650	-	-	-	<650
TRH F Bands						
TRH >C10-C16 (F2)	µg/L	60	-	-	-	<60
TRH >C16-C34 (F3)	µg/L	500	-	-	-	<500
TRH >C34-C40 (F4)	µg/L	500	-	-	-	<500

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.029 Soil 10/6/14 11:00 BH314-3	SE128733.030 Soil 10/6/14 11:00 Trip Blank	SE128733.031 Soil 10/6/14 11:00 Trip Spike	SE128733.032 Water 6/6/14 12:00 R300
Trace Metals (Dissolved) in Water by ICPMS Method: AN318							
Arsenic, As	µg/L	1		-	-	-	<1
Cadmium, Cd	µg/L	0.1		-	-	-	<0.1
Chromium, Cr	µg/L	1		-	-	-	<1
Copper, Cu	µg/L	1		-	-	-	<1
Lead, Pb	µg/L	1		-	-	-	<1
Nickel, Ni	µg/L	1		-	-	-	<1
Zinc, Zn	µg/L	5		-	-	-	<5
Mercury (dissolved) in Water Method: AN311/AN312							
Mercury	mg/L	0.0001		-	-	-	<0.0001

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.033 Water 10/6/14 12:00 R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
VOC's in Soil Method: AN433/AN434						
Fumigants						
2,2-dichloropropane	mg/kg	0.1		-	-	-
1,2-dichloropropane	mg/kg	0.1		-	-	-
cis-1,3-dichloropropene	mg/kg	0.1		-	-	-
trans-1,3-dichloropropene	mg/kg	0.1		-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1		-	-	-
Halogenated Aliphatics						
Dichlorodifluoromethane (CFC-12)	mg/kg	1		-	-	-
Chloromethane	mg/kg	1		-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1		-	-	-
Bromomethane	mg/kg	1		-	-	-
Chloroethane	mg/kg	1		-	-	-
Trichlorofluoromethane	mg/kg	1		-	-	-
Iodomethane	mg/kg	5		-	-	-
1,1-dichloroethene	mg/kg	0.1		-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5		-	-	-
Allyl chloride	mg/kg	0.1		-	-	-
trans-1,2-dichloroethene	mg/kg	0.1		-	-	-
1,1-dichloroethane	mg/kg	0.1		-	-	-
cis-1,2-dichloroethene	mg/kg	0.1		-	-	-
Bromochloromethane	mg/kg	0.1		-	-	-
1,2-dichloroethane	mg/kg	0.1		-	-	-
1,1,1-trichloroethane	mg/kg	0.1		-	-	-
1,1-dichloropropene	mg/kg	0.1		-	-	-
Carbon tetrachloride	mg/kg	0.1		-	-	-
Dibromomethane	mg/kg	0.1		-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1		-	-	-
1,1,2-trichloroethane	mg/kg	0.1		-	-	-
1,3-dichloropropane	mg/kg	0.1		-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1		-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1		-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1		-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1		-	-	-
1,2,3-trichloropropane	mg/kg	0.1		-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1		-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1		-	-	-
Hexachlorobutadiene	mg/kg	0.1		-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.033 Water 10/6/14 12:00 R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
VOC's in Soil Method: AN433/AN434 (continued)					
Halogenated Aromatics					
Chlorobenzene	mg/kg	0.1	-	-	-
Bromobenzene	mg/kg	0.1	-	-	-
2-chlorotoluene	mg/kg	0.1	-	-	-
4-chlorotoluene	mg/kg	0.1	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-
Monocyclic Aromatic Hydrocarbons					
Benzene	mg/kg	0.1	-	<0.1	-
Toluene	mg/kg	0.1	-	<0.1	-
Ethylbenzene	mg/kg	0.1	-	<0.1	-
m/p-xylene	mg/kg	0.2	-	<0.2	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-
o-xylene	mg/kg	0.1	-	<0.1	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-
n-propylbenzene	mg/kg	0.1	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-
tert-butylbenzene	mg/kg	0.1	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-
Nitrogenous Compounds					
Acrylonitrile	mg/kg	0.1	-	-	-
2-nitropropane	mg/kg	10	-	-	-
Oxygenated Compounds					
Acetone (2-propanone)	mg/kg	10	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-
Vinyl acetate	mg/kg	10	-	-	-
MEK (2-butanone)	mg/kg	10	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.033 Water 10/6/14 12:00 R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
VOC's in Soil Method: AN433/AN434 (continued)						
Polycyclic VOCs						
Naphthalene	mg/kg	0.1		-	<0.1	-
Sulphonated Compounds						
Carbon disulfide	mg/kg	0.5		-	-	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-		-	**75**	-
d4-1,2-dichloroethane (Surrogate)	%	-		-	**90**	-
d8-toluene (Surrogate)	%	-		-	**97**	-
Bromofluorobenzene (Surrogate)	%	-		-	**86**	-
Totals						
Total Xylenes*	mg/kg	0.3		-	<0.3	-
Total BTEX*	mg/kg	0.6		-	<0.6	-
Total VOC*	mg/kg	24		-	-	-
Trihalomethanes						
Chloroform	mg/kg	0.1		-	-	-
Bromodichloromethane	mg/kg	0.1		-	-	-
Chlorodibromomethane	mg/kg	0.1		-	-	-
Bromoform	mg/kg	0.1		-	-	-
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410						
TRH C6-C10	mg/kg	25		-	<25	-
TRH C6-C9	mg/kg	20		-	<20	-
Surrogates						
Dibromofluoromethane (Surrogate)	%	-		-	**75**	-
d4-1,2-dichloroethane (Surrogate)	%	-		-	**90**	-
d8-toluene (Surrogate)	%	-		-	**97**	-
Bromofluorobenzene (Surrogate)	%	-		-	**86**	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.033 Water 10/6/14 12:00 R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434/AN410 (continued)						
VPH F Bands						
Benzene (F0)	mg/kg	0.1		-	<0.1	-
TRH C6-C10 minus BTEX (F1)	mg/kg	25		-	<25	-
TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403						
TRH C10-C14	mg/kg	20		-	<20	-
TRH C15-C28	mg/kg	45		-	<45	-
TRH C29-C36	mg/kg	45		-	<45	-
TRH C37-C40	mg/kg	100		-	<100	-
TRH C10-C36 Total	mg/kg	110		-	<110	-
TRH C10-C40 Total	mg/kg	210		-	<210	-
TRH F Bands						
TRH >C10-C16 (F2)	mg/kg	25		-	<25	-
TRH >C16-C34 (F3)	mg/kg	90		-	<90	-
TRH >C34-C40 (F4)	mg/kg	120		-	<120	-
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420						
Naphthalene	mg/kg	0.1		-	-	-
2-methylnaphthalene	mg/kg	0.1		-	-	-
1-methylnaphthalene	mg/kg	0.1		-	-	-
Acenaphthylene	mg/kg	0.1		-	-	-
Acenaphthene	mg/kg	0.1		-	-	-
Fluorene	mg/kg	0.1		-	-	-
Phenanthrene	mg/kg	0.1		-	-	-
Anthracene	mg/kg	0.1		-	-	-
Fluoranthene	mg/kg	0.1		-	-	-
Pyrene	mg/kg	0.1		-	-	-
Benzo(a)anthracene	mg/kg	0.1		-	-	-
Chrysene	mg/kg	0.1		-	-	-
Benzo(b&j)fluoranthene	mg/kg	0.1		-	-	-
Benzo(k)fluoranthene	mg/kg	0.1		-	-	-
Benzo(a)pyrene	mg/kg	0.1		-	-	-
Indeno(1,2,3-cd)pyrene	mg/kg	0.1		-	-	-
Dibenzo(a&h)anthracene	mg/kg	0.1		-	-	-
Benzo(ghi)perylene	mg/kg	0.1		-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	TEQ	0.2		-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	TEQ (mg/kg)	0.3		-	-	-
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	TEQ (mg/kg)	0.2		-	-	-
Total PAH	mg/kg	0.8		-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.033 Water 10/6/14 12:00 R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420 (continued)						
Surrogates						
d5-nitrobenzene (Surrogate)	%	-		-	-	-
2-fluorobiphenyl (Surrogate)	%	-		-	-	-
d14-p-terphenyl (Surrogate)	%	-		-	-	-
OC Pesticides in Soil Method: AN400/AN420						
Hexachlorobenzene (HCB)	mg/kg	0.1		-	-	-
Alpha BHC	mg/kg	0.1		-	-	-
Lindane	mg/kg	0.1		-	-	-
Heptachlor	mg/kg	0.1		-	-	-
Aldrin	mg/kg	0.1		-	-	-
Beta BHC	mg/kg	0.1		-	-	-
Delta BHC	mg/kg	0.1		-	-	-
Heptachlor epoxide	mg/kg	0.1		-	-	-
o,p'-DDE	mg/kg	0.1		-	-	-
Alpha Endosulfan	mg/kg	0.2		-	-	-
Gamma Chlordane	mg/kg	0.1		-	-	-
Alpha Chlordane	mg/kg	0.1		-	-	-
trans-Nonachlor	mg/kg	0.1		-	-	-
p,p'-DDE	mg/kg	0.1		-	-	-
Dieldrin	mg/kg	0.2		-	-	-
Endrin	mg/kg	0.2		-	-	-
o,p'-DDD	mg/kg	0.1		-	-	-
o,p'-DDT	mg/kg	0.1		-	-	-
Beta Endosulfan	mg/kg	0.2		-	-	-
p,p'-DDD	mg/kg	0.1		-	-	-
p,p'-DDT	mg/kg	0.1		-	-	-
Endosulfan sulphate	mg/kg	0.1		-	-	-
Endrin Aldehyde	mg/kg	0.1		-	-	-
Methoxychlor	mg/kg	0.1		-	-	-
Endrin Ketone	mg/kg	0.1		-	-	-
Isodrin	mg/kg	0.1		-	-	-
Mirex	mg/kg	0.1		-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.033 Water 10/6/14 12:00 R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
OC Pesticides in Soil Method: AN400/AN420 (continued)						
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	-	-
OP Pesticides in Soil Method: AN400/AN420						
Dichlorvos	mg/kg	0.5		-	-	-
Dimethoate	mg/kg	0.5		-	-	-
Diazinon (Dimpylate)	mg/kg	0.5		-	-	-
Fenitrothion	mg/kg	0.2		-	-	-
Malathion	mg/kg	0.2		-	-	-
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2		-	-	-
Parathion-ethyl (Parathion)	mg/kg	0.2		-	-	-
Bromophos Ethyl	mg/kg	0.2		-	-	-
Methidathion	mg/kg	0.5		-	-	-
Ethion	mg/kg	0.2		-	-	-
Azinphos-methyl (Guthion)	mg/kg	0.2		-	-	-
Surrogates						
2-fluorobiphenyl (Surrogate)	%	-		-	-	-
d14-p-terphenyl (Surrogate)	%	-		-	-	-
PCBs in Soil Method: AN400/AN420						
Arochlor 1016	mg/kg	0.2		-	-	-
Arochlor 1221	mg/kg	0.2		-	-	-
Arochlor 1232	mg/kg	0.2		-	-	-
Arochlor 1242	mg/kg	0.2		-	-	-
Arochlor 1248	mg/kg	0.2		-	-	-
Arochlor 1254	mg/kg	0.2		-	-	-
Arochlor 1260	mg/kg	0.2		-	-	-
Arochlor 1262	mg/kg	0.2		-	-	-
Arochlor 1268	mg/kg	0.2		-	-	-
Total PCBs (Arochlors)	mg/kg	1		-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	SE128733.033 Water 10/6/14 12:00 R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
PCBs in Soil Method: AN400/AN420 (continued)						
Surrogates						
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-		-	-	-
Total Phenolics in Soil Method: AN289						
Total Phenols	mg/kg	0.1		-	-	-
pH in soil (1:5) Method: AN101						
pH	pH Units	-		-	-	**7.2**
Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: AN122						
Exchangeable Sodium, Na	mg/kg	2		-	-	**1100**
Exchangeable Sodium, Na	meq/100g	0.01		-	-	**4.9**
Exchangeable Sodium Percentage*	%	0.1		-	-	**28.8**
Exchangeable Potassium, K	mg/kg	2		-	-	**170**
Exchangeable Potassium, K	meq/100g	0.01		-	-	**0.44**
Exchangeable Potassium Percentage*	%	0.1		-	-	**2.6**
Exchangeable Calcium, Ca	mg/kg	2		-	-	**1100**
Exchangeable Calcium, Ca	meq/100g	0.01		-	-	**5.3**
Exchangeable Calcium Percentage*	%	0.1		-	-	**31.2**
Exchangeable Magnesium, Mg	mg/kg	2		-	-	**770**
Exchangeable Magnesium, Mg	meq/100g	0.02		-	-	**6.3**
Exchangeable Magnesium Percentage*	%	0.1		-	-	**37.4**
Cation Exchange Capacity	meq/100g	0.02		-	-	**17**
Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: AN040/AN320						
Arsenic, As	mg/kg	3		-	**5**	**9**
Cadmium, Cd	mg/kg	0.3		-	<0.3	**0.6**
Chromium, Cr	mg/kg	0.3		-	**6.3**	**20**
Copper, Cu	mg/kg	0.5		-	**120**	**190**
Lead, Pb	mg/kg	1		-	**340**	**270**
Nickel, Ni	mg/kg	0.5		-	**2.5**	**27**
Zinc, Zn	mg/kg	0.5		-	**430**	**1000**

Parameter	Units	LOR	Sample Number: SE128733.033 Sample Matrix: Water Sample Date: 10/6/14 12:00 Sample Name: R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
Mercury in Soil Method: AN312					
Mercury	mg/kg	0.01	-	**0.20**	**0.06**
Fibre Identification in soil Method: AN602					
FibreID					
Asbestos Detected	No unit	-	-	-	-
SemiQuant					
Estimated Fibres	%w/w	0.01	-	-	-
Moisture Content Method: AN002					
% Moisture	%	0.5	-	**14**	**46**
VOCs in Water Method: AN433/AN434					
Monocyclic Aromatic Hydrocarbons					
Benzene	µg/L	0.5	<0.5	-	-
Toluene	µg/L	0.5	<0.5	-	-
Ethylbenzene	µg/L	0.5	<0.5	-	-
m/p-xylene	µg/L	1	<1	-	-
o-xylene	µg/L	0.5	<0.5	-	-
Polycyclic VOCs					
Naphthalene	µg/L	0.5	<0.5	-	-
Surrogates					
Dibromofluoromethane (Surrogate)	%	-	**103**	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	**113**	-	-
d8-toluene (Surrogate)	%	-	**102**	-	-
Bromofluorobenzene (Surrogate)	%	-	**87**	-	-
Totals					
Total Xylenes	µg/L	1.5	<1.5	-	-
Total BTEX	µg/L	3	<3	-	-

Parameter	Units	LOR	Sample Number: SE128733.033 Sample Matrix: Water Sample Date: 10/6/14 12:00 Sample Name: R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410					
TRH C6-C10	µg/L	50	<50	-	-
TRH C6-C9	µg/L	40	<40	-	-
Surrogates					
Dibromofluoromethane (Surrogate)	%	-	**103**	-	-
d4-1,2-dichloroethane (Surrogate)	%	-	**113**	-	-
d8-toluene (Surrogate)	%	-	**102**	-	-
Bromofluorobenzene (Surrogate)	%	-	**87**	-	-
VPH F Bands					
Benzene (F0)	µg/L	0.5	<0.5	-	-
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	-	-
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403					
TRH C10-C14	µg/L	50	<50	-	-
TRH C15-C28	µg/L	200	<200	-	-
TRH C29-C36	µg/L	200	<200	-	-
TRH C37-C40	µg/L	200	<200	-	-
TRH C10-C36	µg/L	450	<450	-	-
TRH C10-C40	µg/L	650	<650	-	-
TRH F Bands					
TRH >C10-C16 (F2)	µg/L	60	<60	-	-
TRH >C16-C34 (F3)	µg/L	500	<500	-	-
TRH >C34-C40 (F4)	µg/L	500	<500	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name SE128733.033 Water 10/6/14 12:00 R301	SE128733.034 Soil 10/6/14 11:00 B300	SE128733.035 Soil 10/6/14 11:00 EIL-1
Trace Metals (Dissolved) in Water by ICPMS Method: AN318					
Arsenic, As	µg/L	1	<1	-	-
Cadmium, Cd	µg/L	0.1	<0.1	-	-
Chromium, Cr	µg/L	1	<1	-	-
Copper, Cu	µg/L	1	<1	-	-
Lead, Pb	µg/L	1	<1	-	-
Nickel, Ni	µg/L	1	<1	-	-
Zinc, Zn	µg/L	5	**15**	-	-
Mercury (dissolved) in Water Method: AN311/AN312					
Mercury	mg/L	0.0001	<0.0001	-	-

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Exchangeable Cations and Cation Exchange Capacity (CEC/ESP/SAR) Method: ME-(AU)-[ENV]AN122

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Exchangeable Sodium, Na	LB059397	mg/kg	2		111%
Exchangeable Sodium, Na	LB059397	meq/100g	0.01	<0.01	NA
Exchangeable Sodium Percentage*	LB059397	%	0.1		NA
Exchangeable Potassium, K	LB059397	mg/kg	2		94%
Exchangeable Potassium, K	LB059397	meq/100g	0.01	<0.01	NA
Exchangeable Potassium Percentage*	LB059397	%	0.1		NA
Exchangeable Calcium, Ca	LB059397	mg/kg	2		99%
Exchangeable Calcium, Ca	LB059397	meq/100g	0.01	<0.01	NA
Exchangeable Calcium Percentage*	LB059397	%	0.1		NA
Exchangeable Magnesium, Mg	LB059397	mg/kg	2		93%
Exchangeable Magnesium, Mg	LB059397	meq/100g	0.02	<0.02	NA
Exchangeable Magnesium Percentage*	LB059397	%	0.1		NA
Cation Exchange Capacity	LB059397	meq/100g	0.02	<0.02	NA

Mercury (dissolved) in Water Method: ME-(AU)-[ENV]AN311/AN312

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB059437	mg/L	0.0001	0.0000	56%	101%	97%

Mercury in Soil Method: ME-(AU)-[ENV]AN312

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB059294	mg/kg	0.01	<0.01	32%	104%	77%
	LB059344	mg/kg	0.01	<0.01	0 - 18%	101%	95%

Moisture Content Method: ME-(AU)-[ENV]AN002

Parameter	QC Reference	Units	LOR	DUP %RPD
% Moisture	LB059328	%	0.5	0 - 5%

OC Pesticides in Soil Method: ME-(AU)-[ENV]AN400/AN420

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Hexachlorobenzene (HCB)	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Alpha BHC	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Lindane	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Heptachlor	LB059231	mg/kg	0.1	<0.1	0%	122%	75%	2%
	LB059233	mg/kg	0.1	<0.1	0%	121%		
Aldrin	LB059231	mg/kg	0.1	<0.1	0%	123%	76%	2%
	LB059233	mg/kg	0.1	<0.1	0%	125%		
Beta BHC	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Delta BHC	LB059231	mg/kg	0.1	<0.1	0%	115%	69%	1%
	LB059233	mg/kg	0.1	<0.1	0%	124%		
Heptachlor epoxide	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
o,p'-DDE	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Alpha Endosulfan	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Gamma Chlordane	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Alpha Chlordane	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OC Pesticides in Soil **Method: ME-(AU)-[ENV]AN400/AN420 (continued)**

				MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
trans-Nonachlor	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
p,p'-DDE	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Dieldrin	LB059231	mg/kg	0.2	<0.2	0%	123%	74%	1%
	LB059233	mg/kg	0.2	<0.2	0%	124%		
Endrin	LB059231	mg/kg	0.2	<0.2	0%	122%	79%	1%
	LB059233	mg/kg	0.2	<0.2	0%	123%		
o,p'-DDD	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
o,p'-DDT	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Beta Endosulfan	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
p,p'-DDD	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
p,p'-DDT	LB059231	mg/kg	0.1	<0.1	0%	124%	90%	12%
	LB059233	mg/kg	0.1	<0.1	0%	99%		
Endosulfan sulphate	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Endrin Aldehyde	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Methoxychlor	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Endrin Ketone	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Isodrin	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		
Mirex	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0%	NA		

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB059231	%	-	80%	4%	93%	113%	2%
	LB059233	%	-	110%	1 - 5%	96%		

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Soil **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Dichlorvos	LB059231	mg/kg	0.5	<0.5	0%	98%
	LB059233	mg/kg	0.5	<0.5	0%	89%
Dimethoate	LB059231	mg/kg	0.5	<0.5	0%	NA
	LB059233	mg/kg	0.5	<0.5	0%	NA
Diazinon (Dimpylate)	LB059231	mg/kg	0.5	<0.5	0%	99%
	LB059233	mg/kg	0.5	<0.5	0%	84%
Fenitrothion	LB059231	mg/kg	0.2	<0.2	0%	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA
Malathion	LB059231	mg/kg	0.2	<0.2	0%	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB059231	mg/kg	0.2	<0.2	0%	91%
	LB059233	mg/kg	0.2	<0.2	0%	77%
Parathion-ethyl (Parathion)	LB059231	mg/kg	0.2	<0.2	0%	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA
Bromophos Ethyl	LB059231	mg/kg	0.2	<0.2	0%	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA
Methidathion	LB059231	mg/kg	0.5	<0.5	0%	NA
	LB059233	mg/kg	0.5	<0.5	0%	NA
Ethion	LB059231	mg/kg	0.2	<0.2	0%	93%
	LB059233	mg/kg	0.2	<0.2	0%	79%
Azinphos-methyl (Guthion)	LB059231	mg/kg	0.2	<0.2	0%	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
2-fluorobiphenyl (Surrogate)	LB059231	%	-	94%	5%	88%
	LB059233	%	-	92%	2 - 9%	84%
d14-p-terphenyl (Surrogate)	LB059231	%	-	88%	2%	78%
	LB059233	%	-	80%	2 - 4%	76%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Naphthalene	LB059231	mg/kg	0.1	<0.1	0%	93%	87%	2%
	LB059233	mg/kg	0.1	<0.1	0 - 31%	90%		NA
2-methylnaphthalene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 62%	NA		NA
1-methylnaphthalene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 62%	NA		NA
Acenaphthylene	LB059231	mg/kg	0.1	<0.1	0%	93%	90%	2%
	LB059233	mg/kg	0.1	<0.1	0 - 21%	90%		NA
Acenaphthene	LB059231	mg/kg	0.1	<0.1	0%	86%	82%	4%
	LB059233	mg/kg	0.1	<0.1	0 - 17%	87%		NA
Fluorene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 45%	NA		NA
Phenanthrene	LB059231	mg/kg	0.1	<0.1	0%	92%	89%	2%
	LB059233	mg/kg	0.1	<0.1	0 - 32%	88%		NA
Anthracene	LB059231	mg/kg	0.1	<0.1	0%	89%	89%	4%
	LB059233	mg/kg	0.1	<0.1	0 - 36%	88%		NA
Fluoranthene	LB059231	mg/kg	0.1	<0.1	10%	93%	89%	5%
	LB059233	mg/kg	0.1	<0.1	0 - 53%	92%		NA
Pyrene	LB059231	mg/kg	0.1	<0.1	17%	82%	76%	1%
	LB059233	mg/kg	0.1	<0.1	0 - 5%	81%		NA
Benzo(a)anthracene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 26%	NA		NA
Chrysene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 8%	NA		NA
Benzo(b&j)fluoranthene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 25%	NA		NA
Benzo(k)fluoranthene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 16%	NA		NA
Benzo(a)pyrene	LB059231	mg/kg	0.1	<0.1	0%	100%	94%	3%
	LB059233	mg/kg	0.1	<0.1	0 - 23%	95%		NA
Indeno(1,2,3-cd)pyrene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 4%	NA		NA
Dibenzo(a&h)anthracene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 8%	NA		NA
Benzo(ghi)perylene	LB059231	mg/kg	0.1	<0.1	0%	NA	NA	NA
	LB059233	mg/kg	0.1	<0.1	0 - 5%	NA		NA
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=0*	LB059231	TEQ	0.2	<0.2	0%	NA	NA	NA
	LB059233	TEQ	0.2	<0.2	0 - 21%	NA		NA
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR*	LB059231	TEQ (mg/kg)	0.3	<0.3	0%	NA	NA	NA
	LB059233	TEQ (mg/kg)	0.3	<0.3	0 - 21%	NA		NA
Carcinogenic PAHs (as BaP TEQ)-assume results <LOR=LOR/2*	LB059231	TEQ (mg/kg)	0.2	<0.2	0%	NA	NA	NA
	LB059233	TEQ (mg/kg)	0.2	<0.2	0 - 21%	NA		NA
Total PAH	LB059231	mg/kg	0.8	<0.8	0%	NA	NA	NA
	LB059233	mg/kg	0.8	<0.8	0 - 24%	NA		NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
d5-nitrobenzene (Surrogate)	LB059231	%	-	106%	4%	92%	98%	2%
	LB059233	%	-	98%	2 - 4%	84%		NA
2-fluorobiphenyl (Surrogate)	LB059231	%	-	94%	5%	88%	86%	0%
	LB059233	%	-	92%	2 - 9%	84%		NA
d14-p-terphenyl (Surrogate)	LB059231	%	-	88%	2%	78%	78%	3%
	LB059233	%	-	80%	2 - 6%	76%		NA

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PCBs in Soil **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Arochlor 1016	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Arochlor 1221	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Arochlor 1232	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Arochlor 1242	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Arochlor 1248	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Arochlor 1254	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Arochlor 1260	LB059231	mg/kg	0.2	<0.2	0%	116%	122%	0%
	LB059233	mg/kg	0.2	<0.2	0%	119%		
Arochlor 1262	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Arochlor 1268	LB059231	mg/kg	0.2	<0.2	0%	NA	NA	NA
	LB059233	mg/kg	0.2	<0.2	0%	NA		
Total PCBs (Arochlors)	LB059231	mg/kg	1	<1	0%	NA	NA	NA
	LB059233	mg/kg	1	<1	0%	NA		

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB059231	%	-	80%	4%	90%	98%	2%
	LB059233	%	-	110%	1 - 5%	101%		

pH in soil (1:5) **Method: ME-(AU)-[ENV]AN101**

Parameter	QC Reference	Units	LOR	DUP %RPD	LCS %Recovery
pH	LB059303	pH Units	-	0 - 1%	99%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Total Phenolics in Soil **Method: ME-(AU)-[ENV]AN289**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Phenols	LB059346	mg/kg	0.1	<0.1	3%	90%	62%

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest **Method: ME-(AU)-[ENV]AN040/AN320**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB059293	mg/kg	3	<3	0 - 2%	103%	78%
	LB059342	mg/kg	3	<3	4 - 8%	97%	74%
Cadmium, Cd	LB059293	mg/kg	0.3	<0.3	0 - 28%	105%	81%
	LB059342	mg/kg	0.3	<0.3	0%	99%	77%
Chromium, Cr	LB059293	mg/kg	0.3	<0.3	1 - 10%	103%	85%
	LB059342	mg/kg	0.3	<0.3	1 - 5%	98%	80%
Copper, Cu	LB059293	mg/kg	0.5	<0.5	3 - 4%	104%	87%
	LB059342	mg/kg	0.5	<0.5	3 - 4%	94%	80%
Lead, Pb	LB059293	mg/kg	1	<1	5 - 12%	103%	79%
	LB059342	mg/kg	1	<1	4 - 9%	97%	79%
Nickel, Ni	LB059293	mg/kg	0.5	<0.5	2 - 6%	103%	71%
	LB059342	mg/kg	0.5	<0.5	4 - 43%	98%	77%
Zinc, Zn	LB059293	mg/kg	0.5	<0.5	3 - 4%	105%	90%
	LB059342	mg/kg	0.5	<0.5	0 - 1%	97%	64%

Trace Metals (Dissolved) in Water by ICPMS **Method: ME-(AU)-[ENV]AN318**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Arsenic, As	LB059206	µg/L	1	<1	0%	97%
Cadmium, Cd	LB059206	µg/L	0.1	<0.1	0%	101%
Chromium, Cr	LB059206	µg/L	1	<1	0%	102%
Copper, Cu	LB059206	µg/L	1	<1	0 - 2%	105%
Lead, Pb	LB059206	µg/L	1	<1	0%	103%
Nickel, Ni	LB059206	µg/L	1	<1	0%	106%
Zinc, Zn	LB059206	µg/L	5	<5	5%	109%

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

TRH (Total Recoverable Hydrocarbons) in Soil **Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
TRH C10-C14	LB059231	mg/kg	20	<20	0 - 1%	100%	93%	3%
	LB059233	mg/kg	20	<20	0 - 5%	103%	108%	7%
TRH C15-C28	LB059231	mg/kg	45	<45	0 - 6%	98%	88%	3%
	LB059233	mg/kg	45	<45	5 - 6%	100%	103%	8%
TRH C29-C36	LB059231	mg/kg	45	<45	0 - 36%	85%	90%	0%
	LB059233	mg/kg	45	<45	6 - 17%	98%	110%	2%
TRH C37-C40	LB059231	mg/kg	100	<100	0%	NA	NA	NA
	LB059233	mg/kg	100	<100	0%	NA	NA	NA
TRH C10-C36 Total	LB059231	mg/kg	110	<110	0 - 9%	NA	NA	NA
	LB059233	mg/kg	110	<110	2 - 10%	NA	NA	NA
TRH C10-C40 Total	LB059231	mg/kg	210	<210	0 - 9%	NA	NA	NA
	LB059233	mg/kg	210	<210	2 - 10%	NA	NA	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery	MSD %RPD
TRH >C10-C16 (F2)	LB059231	mg/kg	25	<25	0%	98%	88%	3%
	LB059233	mg/kg	25	<25	0 - 3%	100%	103%	8%
TRH >C16-C34 (F3)	LB059231	mg/kg	90	<90	0 - 10%	95%	88%	6%
	LB059233	mg/kg	90	<90	4 - 8%	100%	103%	0%
TRH >C34-C40 (F4)	LB059231	mg/kg	120	<120	0%	90%	NA	NA
	LB059233	mg/kg	120	<120	0%	100%	NA	NA

TRH (Total Recoverable Hydrocarbons) in Water **Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C10-C14	LB059235	µg/L	50	<50	90%
TRH C15-C28	LB059235	µg/L	200	<200	96%
TRH C29-C36	LB059235	µg/L	200	<200	94%
TRH C37-C40	LB059235	µg/L	200	<200	NA
TRH C10-C36	LB059235	µg/L	450	<450	NA
TRH C10-C40	LB059235	µg/L	650	<650	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH >C10-C16 (F2)	LB059235	µg/L	60	<60	91%
TRH >C16-C34 (F3)	LB059235	µg/L	500	<500	97%
TRH >C34-C40 (F4)	LB059235	µg/L	500	<500	98%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434

Fumigants

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
2,2-dichloropropane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,2-dichloropropane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
cis-1,3-dichloropropene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
trans-1,3-dichloropropene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,2-dibromoethane (EDB)	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA

Halogenated Aliphatics

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Dichlorodifluoromethane (CFC-12)	LB059219	mg/kg	1	<1	0%	NA
	LB059220	mg/kg	1	<1	0%	NA
Chloromethane	LB059219	mg/kg	1	<1	0%	NA
	LB059220	mg/kg	1	<1	0%	NA
Vinyl chloride (Chloroethene)	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Bromomethane	LB059219	mg/kg	1	<1	0%	NA
	LB059220	mg/kg	1	<1	0%	NA
Chloroethane	LB059219	mg/kg	1	<1	0%	NA
	LB059220	mg/kg	1	<1	0%	NA
Trichlorofluoromethane	LB059219	mg/kg	1	<1	0%	NA
	LB059220	mg/kg	1	<1	0%	NA
Iodomethane	LB059219	mg/kg	5	<5	0%	NA
	LB059220	mg/kg	5	<5	0%	NA
1,1-dichloroethene	LB059219	mg/kg	0.1	<0.1	0%	66%
	LB059220	mg/kg	0.1	<0.1	0%	88%
Dichloromethane (Methylene chloride)	LB059219	mg/kg	0.5	<0.5	0%	NA
	LB059220	mg/kg	0.5	<0.5	0%	NA
Allyl chloride	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
trans-1,2-dichloroethene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,1-dichloroethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
cis-1,2-dichloroethene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Bromochloromethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,2-dichloroethane	LB059219	mg/kg	0.1	<0.1	0%	114%
	LB059220	mg/kg	0.1	<0.1	0%	127%
1,1,1-trichloroethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,1-dichloropropene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Carbon tetrachloride	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Dibromomethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Trichloroethene (Trichloroethylene -TCE)	LB059219	mg/kg	0.1	<0.1	0%	68%
	LB059220	mg/kg	0.1	<0.1	0%	89%
1,1,2-trichloroethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434 (continued)

				MB	DUP %RPD	LCS %Recovery
1,3-dichloropropane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Tetrachloroethene (Perchloroethylene,PCE)	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,1,1,2-tetrachloroethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
cis-1,4-dichloro-2-butene	LB059219	mg/kg	1	<1	0%	NA
	LB059220	mg/kg	1	<1	0%	NA
1,1,2,2-tetrachloroethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,2,3-trichloropropane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
trans-1,4-dichloro-2-butene	LB059219	mg/kg	1	<1	0%	NA
	LB059220	mg/kg	1	<1	0%	NA
1,2-dibromo-3-chloropropane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Hexachlorobutadiene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA

Halogenated Aromatics

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Chlorobenzene	LB059219	mg/kg	0.1	<0.1	0%	109%
	LB059220	mg/kg	0.1	<0.1	0%	109%
Bromobenzene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
2-chlorotoluene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
4-chlorotoluene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,3-dichlorobenzene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,4-dichlorobenzene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,2-dichlorobenzene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,2,4-trichlorobenzene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
1,2,3-trichlorobenzene	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene	LB059219	mg/kg	0.1	<0.1	0%	80%	81%
	LB059220	mg/kg	0.1	<0.1	0%	73%	72%
Toluene	LB059219	mg/kg	0.1	<0.1	0%	76%	84%
	LB059220	mg/kg	0.1	<0.1	0%	96%	80%
Ethylbenzene	LB059219	mg/kg	0.1	<0.1	0%	80%	78%
	LB059220	mg/kg	0.1	<0.1	0%	91%	72%
m/p-xylene	LB059219	mg/kg	0.2	<0.2	0%	79%	74%
	LB059220	mg/kg	0.2	<0.2	0%	92%	70%
Styrene (Vinyl benzene)	LB059219	mg/kg	0.1	<0.1	0%	NA	
	LB059220	mg/kg	0.1	<0.1	0%	NA	
o-xylene	LB059219	mg/kg	0.1	<0.1	0%	80%	75%
	LB059220	mg/kg	0.1	<0.1	0%	89%	76%
Isopropylbenzene (Cumene)	LB059219	mg/kg	0.1	<0.1	0%	NA	
	LB059220	mg/kg	0.1	<0.1	0%	NA	
n-propylbenzene	LB059219	mg/kg	0.1	<0.1	0%	NA	

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434 (continued)

				MB	DUP %RPD	LCS %Recovery	MS %Recovery
n-propylbenzene	LB059220	mg/kg	0.1	<0.1	0%	NA	
1,3,5-trimethylbenzene	LB059219	mg/kg	0.1	<0.1	0%	NA	
	LB059220	mg/kg	0.1	<0.1	0%	NA	
tert-butylbenzene	LB059219	mg/kg	0.1	<0.1	0%	NA	
	LB059220	mg/kg	0.1	<0.1	0%	NA	
1,2,4-trimethylbenzene	LB059219	mg/kg	0.1	<0.1	0%	NA	
	LB059220	mg/kg	0.1	<0.1	0%	NA	
sec-butylbenzene	LB059219	mg/kg	0.1	<0.1	0%	NA	
	LB059220	mg/kg	0.1	<0.1	0%	NA	
p-isopropyltoluene	LB059219	mg/kg	0.1	<0.1	0%	NA	
	LB059220	mg/kg	0.1	<0.1	0%	NA	
n-butylbenzene	LB059219	mg/kg	0.1	<0.1	0%	NA	
	LB059220	mg/kg	0.1	<0.1	0%	NA	

Nitrogenous Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Acrylonitrile	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
2-nitropropane	LB059219	mg/kg	10	<10	0%	NA
	LB059220	mg/kg	10	<10	0%	NA

Oxygenated Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Acetone (2-propanone)	LB059219	mg/kg	10	<10	0%	NA
	LB059220	mg/kg	10	<10	0%	NA
MtBE (Methyl-tert-butyl ether)	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Vinyl acetate	LB059219	mg/kg	10	<10	0%	NA
	LB059220	mg/kg	10	<10	0%	NA
MEK (2-butanone)	LB059219	mg/kg	10	<10	0%	NA
	LB059220	mg/kg	10	<10	0%	NA
MIBK (4-methyl-2-pentanone)	LB059219	mg/kg	1	<1	0%	NA
	LB059220	mg/kg	1	<1	0%	NA
2-hexanone (MBK)	LB059219	mg/kg	5	<5	0%	NA
	LB059220	mg/kg	5	<5	0%	NA

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Naphthalene	LB059219	mg/kg	0.1	<0.1	0%	NA	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA	NA

Sulphonated Compounds

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Carbon disulfide	LB059219	mg/kg	0.5	<0.5	0%	NA
	LB059220	mg/kg	0.5	<0.5	0%	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB059219	%	-	87%	2 - 4%	109%	74%
	LB059220	%	-	95%	5%	119%	84%
d4-1,2-dichloroethane (Surrogate)	LB059219	%	-	118%	2 - 7%	127%	95%
	LB059220	%	-	119%	7%	79%	101%
d8-toluene (Surrogate)	LB059219	%	-	87%	4 - 5%	88%	99%
	LB059220	%	-	110%	9%	113%	109%
Bromofluorobenzene (Surrogate)	LB059219	%	-	91%	4%	99%	89%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434 (continued)

				MB	DUP %RPD	LCS %Recovery	MS %Recovery
Bromofluorobenzene (Surrogate)	LB059220	%	-	112%	5%	113%	113%

Totals

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Total Xylenes*	LB059219	mg/kg	0.3	<0.3	0%	NA	NA
	LB059220	mg/kg	0.3	<0.3	0%	NA	NA
Total BTEX*	LB059219	mg/kg	0.6	<0.6	0%	NA	NA
	LB059220	mg/kg	0.6	<0.6	0%	NA	NA

Trihalomethanes

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Chloroform	LB059219	mg/kg	0.1	<0.1	0%	62%
	LB059220	mg/kg	0.1	<0.1	0%	98%
Bromodichloromethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Chlorodibromomethane	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA
Bromoform	LB059219	mg/kg	0.1	<0.1	0%	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA

VOCs in Water Method: ME-(AU)-[ENV]AN433/AN434

Monocyclic Aromatic Hydrocarbons

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene	LB059254	µg/L	0.5	<0.5	111%
Toluene	LB059254	µg/L	0.5	<0.5	114%
Ethylbenzene	LB059254	µg/L	0.5	<0.5	118%
m/p-xylene	LB059254	µg/L	1	<1	110%
o-xylene	LB059254	µg/L	0.5	<0.5	116%

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB059254	µg/L	0.5	<0.5	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB059254	%	-	107%	94%
d4-1,2-dichloroethane (Surrogate)	LB059254	%	-	105%	95%
d8-toluene (Surrogate)	LB059254	%	-	99%	101%
Bromofluorobenzene (Surrogate)	LB059254	%	-	90%	110%

Totals

Parameter	QC Reference	Units	LOR	MB
Total Xylenes	LB059254	µg/L	1.5	<1.5
Total BTEX	LB059254	µg/L	3	<3

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Volatile Petroleum Hydrocarbons in Soil **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
TRH C6-C10	LB059219	mg/kg	25	<25	0%	91%	92%
	LB059220	mg/kg	25	<25	0%	93%	87%
TRH C6-C9	LB059219	mg/kg	20	<20	0%	93%	83%
	LB059220	mg/kg	20	<20	0%	98%	91%

Surrogates

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Dibromofluoromethane (Surrogate)	LB059219	%	-	90%	2 - 4%	83%	74%
	LB059220	%	-	120%	5%	111%	84%
d4-1,2-dichloroethane (Surrogate)	LB059219	%	-	108%	2 - 7%	103%	95%
	LB059220	%	-	82%	7%	117%	101%
d8-toluene (Surrogate)	LB059219	%	-	101%	2 - 5%	109%	99%
	LB059220	%	-	115%	2%	105%	109%
Bromofluorobenzene (Surrogate)	LB059219	%	-	77%	2 - 4%	103%	89%
	LB059220	%	-	106%	6%	113%	113%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Benzene (F0)	LB059219	mg/kg	0.1	<0.1	0%	NA	NA
	LB059220	mg/kg	0.1	<0.1	0%	NA	NA
TRH C6-C10 minus BTEX (F1)	LB059219	mg/kg	25	<25	0%	121%	127%
	LB059220	mg/kg	25	<25	0%	103%	120%

Volatile Petroleum Hydrocarbons in Water **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C6-C10	LB059254	µg/L	50	<50	118%
TRH C6-C9	LB059254	µg/L	40	<40	110%

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB059254	%	-	107%	94%
d4-1,2-dichloroethane (Surrogate)	LB059254	%	-	105%	95%
d8-toluene (Surrogate)	LB059254	%	-	99%	101%
Bromofluorobenzene (Surrogate)	LB059254	%	-	90%	110%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene (F0)	LB059254	µg/L	0.5	<0.5	NA
TRH C6-C10 minus BTEX (F1)	LB059254	µg/L	50	<50	127%

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analsysis by ASS or ICP as per USEPA Method 200.8.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN088	Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700.
AN101	pH in Soil Sludge Sediment and Water: pH is measured electrometrically using a combination electrode (glass plus reference electrode) and is calibrated against 3 buffers purchased commercially. For soils, an extract with water (or 0.01M CaCl2) is made at a ratio of 1:5 and the pH determined and reported on the extract. Reference APHA 4500-H+.
AN122	Exchangeable Cations, CEC and ESP: Soil sample is extracted in 1M Ammonium Acetate at pH=7 (or 1M Ammonium Chloride at pH=7) with cations (Na, K, Ca & Mg) then determined by ICP OES/ICP MS and reported as Exchangeable Cations. For saline soils, these results can be corrected for water soluble cations and reported as Exchangeable cations in meq/100g or soil can be pretreated (aqueous ethanol/aqueous glycerol) prior to extraction. Cation Exchange Capacity (CEC) is the sum of the exchangeable cations in meq/100g.
AN122	The Exchangeable Sodium Percentage (ESP) is calculated as the exchangeable sodium divided by the CEC (all in meq/100g) times 100. ESP can be used to categorise the sodicity of the soil as below: ESP < 6% non-sodic ESP 6-15% sodic ESP >15% strongly sodic Method is refernced to Rayment and Higginson, 1992, sections 15D3 and 15N1.-
AN289	Analysis of Total Phenols in Soil Sediment and Water: Steam distillable phenols react with 4-aminoantipyrine at pH 7.9±0.1 in the presence of potassium ferricyanide to form a coloured antipyrine dye analysed by Discrete Analyser. Reference APHA 5530 B/D.
AN311/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN400	OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.)
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is not corrected for Naphthalene.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Petroleum Hydrocarbons (TPH) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependant on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN433/AN434/AN410	VOCs and C6-C9/C6-C10 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

ANALYTICAL REPORT

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Anthony Barkway	Manager	Jon Dicker
Client	Environmental Investigations	Laboratory	SGS Cairns Environmental
Address	Suite 6.01, 55 Miller Street NSW 2009	Address	Unit 2, 58 Comport St Portsmith QLD 4870
Telephone	02 8594 0400	Telephone	+61 07 4035 5111
Facsimile	02 8594 0499	Facsimile	+61 07 4035 5122
Email	au.environmental.sydney@sgs.com	Email	AU.Environmental.Cairns@sgs.com
Project	**SE128633-E22215-20 Waterview Street**	SGS Reference	**CE110389 R0**
Order Number	(Not specified)	Report Number	0000018108
Samples	8	Date Reported	18 Jun 2014
		Date Received	13 Jun 2014

COMMENTS

Whilst SGS laboratories conform to ISO:17025 standards, results of analysis in this report fall outside of the current scope of NATA accreditation

SIGNATORIES

Nathan Quinn
Micro Supervisor / Quality Co-ordinator

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	CE110389.001 Soil 06 Jun 2014 SE128633.001	CE110389.002 Soil 06 Jun 2014 SE128633.002	CE110389.003 Soil 06 Jun 2014 SE128633.003	CE110389.004 Soil 06 Jun 2014 SE128633.004
Moisture Content Method: AN002							
% Moisture	%	0.5		**10**	**19**	**22**	**18**
TAA (Titratable Actual Acidity) Method: AN219							
pH KCl	pH Units	-		**9.5**	**9.0**	**9.3**	**9.3**
Titratable Actual Acidity	kg H2SO4/T	0.25		<0.25	<0.25	<0.25	<0.25
Titratable Actual Acidity (TAA) moles H+/tonne	moles H+/T	5		<5	<5	<5	<5
Titratable Actual Acidity (TAA) S%w/w	%w/w S	0.01		<0.01	<0.01	<0.01	<0.01
Sulphur (SKCl)	%w/w	0.005		**0.013**	**0.028**	**0.018**	**0.017**
Calcium (CaKCl)	%w/w	0.005		**0.10**	**0.14**	**0.10**	**0.10**
Magnesium (MgKCl)	%w/w	0.005		**0.018**	**0.031**	**0.029**	**0.024**
TPA (Titratable Peroxide Acidity) Method: AN218							
Peroxide pH (pH Ox)	pH Units	-		**9.8**	**7.8**	**8.2**	**8.5**
TPA as kg H_2SO_4/tonne	kg H2SO4/T	0.25		<0.25	<0.25	<0.25	<0.25
TPA as moles H+/tonne	moles H+/T	5		<5	<5	<5	<5
TPA as S % W/W	%w/w S	0.01		<0.01	<0.01	<0.01	<0.01
Titratable Sulfidic Acidity as moles H+/tonne	moles H+/T	5		<5	<5	<5	<5
Titratable Sulfidic Acidity as kg H_2SO_4/tonne	kg H2SO4/T	0.25		<0.25	<0.25	<0.25	<0.25
Titratable Sulfidic Acidity as S % W/W	%w/w S	0.01		<0.01	<0.01	<0.01	<0.01
ANCE as % $CaCO_3$	% CaCO3	0.01		**0.53**	**0.45**	**0.33**	**0.28**
ANCE as moles H+/tonne	moles H+/T	5		**105**	**90**	**65**	**55**
ANCE as S % W/W	%w/w S	0.01		**0.17**	**0.14**	**0.10**	**0.09**
Peroxide Oxidisable Sulphur (Spos)	%w/w	0.005		<0.005	**0.18**	**0.058**	**0.058**
Peroxide Oxidisable Sulphur as moles H+/tonne	moles H+/T	5		<5	**113**	**36**	**36**
Sulphur (Sp)	%w/w	0.005		**0.018**	**0.21**	**0.075**	**0.075**
Calcium (Cap)	%w/w	0.005		**0.19**	**0.28**	**0.15**	**0.16**
Reacted Calcium (CaA)	%w/w	0.005		**0.089**	**0.14**	**0.050**	**0.056**
Reacted Calcium (CaA)	moles H+/T	5		**44**	**69**	**25**	**28**
Magnesium (Mgp)	%w/w	0.005		**0.022**	**0.049**	**0.042**	**0.029**
Reacted Magnesium (MgA)	%w/w	0.005		<0.005	**0.018**	**0.013**	**0.005**
Reacted Magnesium (MgA)	moles H+/T	5		<5	**15**	**11**	<5
Net Acid Soluble Sulphur as % w/w	%w/w	0.005		-	-	-	-
Net Acid Soluble Sulphur as moles H+/tonne	moles H+/T	5		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	CE110389.001 Soil 06 Jun 2014 SE128633.001	CE110389.002 Soil 06 Jun 2014 SE128633.002	CE110389.003 Soil 06 Jun 2014 SE128633.003	CE110389.004 Soil 06 Jun 2014 SE128633.004
SPOCAS Net Acidity Calculations **Method: AN220**							
s-Net Acidity	%w/w S	0.01		<0.01	**0.10**	<0.01	<0.01
a-Net Acidity	moles H+/T	5		<5	**61**	<5	<5
Liming Rate	kg CaCO3/T	0.1		-	**4.6**	-	-
Verification s-Net Acidity	%w/w S	-20		-	**-0.02**	**-0.04**	**-0.03**
a-Net Acidity without ANCE	moles H+/T	5		<5	**110**	**36**	**36**
Liming Rate without ANCE	kg CaCO3/T	0.1		-	**8.5**	**2.7**	**2.7**

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	CE110389.005 Soil 06 Jun 2014 SE128633.005	CE110389.006 Soil 10 Jun 2014 SE128633.006	CE110389.007 Soil 10 Jun 2014 SE128633.007	CE110389.008 Soil 10 Jun 2014 SE128633.008
Moisture Content Method: AN002							
% Moisture	%	0.5		**20**	**38**	**27**	**29**
TAA (Titratable Actual Acidity) Method: AN219							
pH KCl	pH Units	-		**7.4**	**4.9**	**4.9**	**4.8**
Titratable Actual Acidity	kg H2SO4/T	0.25		<0.25	**0.86**	**0.61**	**0.80**
Titratable Actual Acidity (TAA) moles H+/tonne	moles H+/T	5		<5	**17**	**12**	**16**
Titratable Actual Acidity (TAA) S%w/w	%w/w S	0.01		<0.01	**0.03**	**0.02**	**0.03**
Sulphur (SKCl)	%w/w	0.005		<0.005	**0.090**	**0.056**	**0.073**
Calcium (CaKCl)	%w/w	0.005		**0.13**	**0.074**	**0.040**	**0.042**
Magnesium (MgKCl)	%w/w	0.005		**0.007**	**0.012**	**0.020**	**0.020**
TPA (Titratable Peroxide Acidity) Method: AN218							
Peroxide pH (pH Ox)	pH Units	-		**7.3**	**1.9**	**2.1**	**2.1**
TPA as kg H_2SO_4/tonne	kg H2SO4/T	0.25		<0.25	**58**	**22**	**25**
TPA as moles H+/tonne	moles H+/T	5		<5	**1185**	**457**	**514**
TPA as S % W/W	%w/w S	0.01		<0.01	**1.90**	**0.73**	**0.82**
Titratable Sulfidic Acidity as moles H+/tonne	moles H+/T	5		<5	**1168**	**444**	**498**
Titratable Sulfidic Acidity as kg H_2SO_4/tonne	kg H2SO4/T	0.25		<0.25	**57**	**22**	**24**
Titratable Sulfidic Acidity as S % W/W	%w/w S	0.01		<0.01	**1.87**	**0.71**	**0.80**
ANCE as % $CaCO_3$	% CaCO3	0.01		**0.35**	<0.01	<0.01	<0.01
ANCE as moles H+/tonne	moles H+/T	5		**70**	<5	<5	<5
ANCE as S % W/W	%w/w S	0.01		**0.11**	<0.01	<0.01	<0.01
Peroxide Oxidisable Sulphur (Spos)	%w/w	0.005		**0.013**	**1.7**	**0.74**	**0.83**
Peroxide Oxidisable Sulphur as moles H+/tonne	moles H+/T	5		**8**	**1069**	**463**	**516**
Sulphur (Sp)	%w/w	0.005		**0.015**	**1.8**	**0.80**	**0.90**
Calcium (Cap)	%w/w	0.005		**0.18**	**0.074**	**0.043**	**0.047**
Reacted Calcium (CaA)	%w/w	0.005		**0.053**	<0.005	<0.005	**0.005**
Reacted Calcium (CaA)	moles H+/T	5		**27**	<5	<5	<5
Magnesium (Mgp)	%w/w	0.005		**0.011**	**0.012**	**0.021**	**0.021**
Reacted Magnesium (MgA)	%w/w	0.005		<0.005	<0.005	<0.005	<0.005
Reacted Magnesium (MgA)	moles H+/T	5		<5	<5	<5	<5
Net Acid Soluble Sulphur as % w/w	%w/w	0.005		-	-	-	-
Net Acid Soluble Sulphur as moles H+/tonne	moles H+/T	5		-	-	-	-

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	CE110389.005 Soil 06 Jun 2014 SE128633.005	CE110389.006 Soil 10 Jun 2014 SE128633.006	CE110389.007 Soil 10 Jun 2014 SE128633.007	CE110389.008 Soil 10 Jun 2014 SE128633.008
SPOCAS Net Acidity Calculations Method: AN220							
s-Net Acidity	%w/w S	0.01		<0.01	**1.7**	**0.76**	**0.85**
a-Net Acidity	moles H+/T	5		<5	**1100**	**480**	**530**
Liming Rate	kg CaCO3/T	0.1		-	**82**	**36**	**40**
Verification s-Net Acidity	%w/w S	-20		-	**0.57**	**0.25**	**0.28**
a-Net Acidity without ANCE	moles H+/T	5		**8**	**1100**	**480**	**530**
Liming Rate without ANCE	kg CaCO3/T	0.1		-	**82**	**36**	**40**

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage.* Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

No QC samples were reported for this job.

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN004	Soils, sediments and sludges are pulverised using an LM2 ringmill. The dry sample is pulverised to a particle size of >90% passing through a -75µm sieve.
AN218	Soil samples are subjected to extreme oxidising conditions using hydrogen peroxide. Continuous application of heat and peroxide ensure all sulphide is converted to sulphuric acid. Excess peroxide is broken down by a copper catalyst prior to titration for acidity. Calcium, magnesium, and sulphur are determined by ICP-OES. Also included is a carbonate modification step which, depending on pH after the initial oxidation, gives a measure of ANC.
AN219	Dried pulped sample is extracted for 4 hours in a 1 M KCl solution. The ratio of sample to solution is 1:40. The extract is titrated for acidity. Calcium, magnesium, and sulphur are determined by ICP-AES.
AN220	SPOCAS Suite: Scheme for the calculation of net acidities and liming rates using a Fineness Factor of 1.5.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
^	Performed by outside laboratory.	-	The sample was not analysed for this analyte
		NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 111355

Client:

Environmental Investigations
Suite 6.01, 55 Miller Street
Pyrmont
NSW 2009

Attention: Anthony Barkway

Sample log in details:

Your Reference:	**E22215, Putney**		
No. of samples:	1 Soil		
Date samples received / completed instructions received	11/06/2014	/	11/06/2014

Analysis Details:

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

Report Details:

Date results requested by: / Issue Date:	17/06/14	/	17/06/14
Date of Preliminary Report:	Not Issued		

NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference:	UNITS	111355-1
Your Reference	----------	I300
Date Sampled	----------	10/06/2014
Type of sample		Soil
Date extracted	-	12/06/2014
Date analysed	-	13/06/2014
TRHC$_6$ - C$_9$	mg/kg	<25
TRHC$_6$ - C$_{10}$	mg/kg	<25
vTPHC$_6$ - C$_{10}$ less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	79

svTRH (C10-C40) in Soil		
Our Reference:	UNITS	111355-1
Your Reference	----------	I300
Date Sampled	----------	10/06/2014
Type of sample		Soil
Date extracted	-	12/06/2014
Date analysed	-	13/06/2014
TRHC$_{10}$ - C$_{14}$	mg/kg	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100
TRH>C$_{10}$-C$_{16}$	mg/kg	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	mg/kg	<50
TRH>C$_{16}$-C$_{34}$	mg/kg	<100
TRH>C$_{34}$-C$_{40}$	mg/kg	<100
Surrogate o-Terphenyl	%	88

Acid Extractable metals in soil		
Our Reference:	UNITS	111355-1
Your Reference	----------	I300
Date Sampled	----------	10/06/2014
Type of sample		Soil
Date digested	-	12/06/2014
Date analysed	-	12/06/2014
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	7
Copper	mg/kg	110
Lead	mg/kg	350
Mercury	mg/kg	0.2
Nickel	mg/kg	3
Zinc	mg/kg	410

Moisture		
Our Reference:	UNITS	111355-1
Your Reference	----------	I300
Date Sampled	----------	10/06/2014
Type of sample		Soil
Date prepared	-	12/06/2014
Date analysed	-	13/06/2014
Moisture	%	14

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/06/2014	[NT]	[NT]	LCS-1	12/06/2014
Date analysed	-			13/06/2014	[NT]	[NT]	LCS-1	13/06/2014
TRHC$_6$ - C$_9$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	76%
TRHC$_6$ - C$_{10}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-1	76%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-1	62%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-1	79%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	51%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-1	80%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-1	84%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	85	[NT]	[NT]	LCS-1	82%

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/06/2014	[NT]	[NT]	LCS-1	12/06/2014
Date analysed	-			12/06/2014	[NT]	[NT]	LCS-1	12/06/2014
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	96%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	96%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	105%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-1	96%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	96%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-1	105%
Surrogate o-Terphenyl	%		Org-003	83	[NT]	[NT]	LCS-1	96%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			12/06/2014	[NT]	[NT]	LCS-3	12/06/2014
Date analysed	-			12/06/2014	[NT]	[NT]	LCS-3	12/06/2014
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-3	92%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-3	98%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	96%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	97%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	94%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-3	102%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	94%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	95%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

Report Comments:

Asbestos ID was analysed by Approved Identifier:	Not applicable for this job
Asbestos ID was authorised by Approved Signatory:	Not applicable for this job

INS: Insufficient sample for this test	PQL: Practical Quantitation Limit	NT: Not tested
NA: Test not required	RPD: Relative Percent Difference	NA: Test not required
<: Less than	>: Greater than	LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

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

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

ANALYTICAL REPORT

WORLD RECOGNISED ACCREDITATION

CLIENT DETAILS		LABORATORY DETAILS	
Contact	Anthony Barkway	Manager	Huong Crawford
Client	Environmental Investigations	Laboratory	SGS Alexandria Environmental
Address	Suite 6.01, 55 Miller Street NSW 2009	Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	02 9516 0722	Telephone	+61 2 8594 0400
Facsimile	02 9516 0741	Facsimile	+61 2 8594 0499
Email	anthony.barkway@eiaustralia.com.au	Email	au.environmental.sydney@sgs.com
Project	**E22215 - 20 Waterview St - Putney**	SGS Reference	**SE129279 R0**
Order Number	**E22215**	Report Number	0000086657
Samples	1	Date Reported	09 Jul 2014
		Date Received	02 Jul 2014

COMMENTS

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

VOC - The Limit of Reporting (LOR) has been raised for Acetone due to interferences from the sample matrix.

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Huong Crawford
Production Manager

Jaimie Cheung
Metals Chemist

Ly Kim Ha
Organic Section Head

Parameter	Units	LOR	Sample Number SE129279.001 Sample Matrix Water Sample Date 2/7/14 12:00 Sample Name GW4-1
VOCs in Water Method: AN433/AN434			
Fumigants			
2,2-dichloropropane	µg/L	0.5	<0.5
1,2-dichloropropane	µg/L	0.5	<0.5
cis-1,3-dichloropropene	µg/L	0.5	<0.5
trans-1,3-dichloropropene	µg/L	0.5	<0.5
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5
Halogenated Aliphatics			
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
Chloromethane	µg/L	5	<5
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3
Bromomethane	µg/L	10	<10
Chloroethane	µg/L	5	<5
Trichlorofluoromethane	µg/L	1	<1
Iodomethane	µg/L	5	<5
1,1-dichloroethene	µg/L	0.5	<0.5
Dichloromethane (Methylene chloride)	µg/L	5	<5
Allyl chloride	µg/L	2	<2
trans-1,2-dichloroethene	µg/L	0.5	<0.5
1,1-dichloroethane	µg/L	0.5	<0.5
cis-1,2-dichloroethene	µg/L	0.5	<0.5
Bromochloromethane	µg/L	0.5	<0.5
1,2-dichloroethane	µg/L	0.5	<0.5
1,1,1-trichloroethane	µg/L	0.5	<0.5
1,1-dichloropropene	µg/L	0.5	<0.5
Carbon tetrachloride	µg/L	0.5	<0.5
Dibromomethane	µg/L	0.5	<0.5
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
1,1,2-trichloroethane	µg/L	0.5	<0.5
1,3-dichloropropane	µg/L	0.5	<0.5
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5
cis-1,4-dichloro-2-butene	µg/L	1	<1
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
1,2,3-trichloropropane	µg/L	0.5	<0.5
trans-1,4-dichloro-2-butene	µg/L	1	<1
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
Hexachlorobutadiene	µg/L	0.5	<0.5

Parameter	Units	LOR	Sample Number SE129279.001 Sample Matrix Water Sample Date 2/7/14 12:00 Sample Name GW4-1
VOCs in Water Method: AN433/AN434 (continued)			
Halogenated Aromatics			
Chlorobenzene	µg/L	0.5	<0.5
Bromobenzene	µg/L	0.5	<0.5
2-chlorotoluene	µg/L	0.5	<0.5
4-chlorotoluene	µg/L	0.5	<0.5
1,3-dichlorobenzene	µg/L	0.5	<0.5
1,4-dichlorobenzene	µg/L	0.3	<0.3
1,2-dichlorobenzene	µg/L	0.5	<0.5
1,2,4-trichlorobenzene	µg/L	0.5	<0.5
1,2,3-trichlorobenzene	µg/L	0.5	<0.5
Monocyclic Aromatic Hydrocarbons			
Benzene	µg/L	0.5	**0.7**
Toluene	µg/L	0.5	**0.9**
Ethylbenzene	µg/L	0.5	<0.5
m/p-xylene	µg/L	1	<1
Styrene (Vinyl benzene)	µg/L	0.5	<0.5
o-xylene	µg/L	0.5	<0.5
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
n-propylbenzene	µg/L	0.5	<0.5
1,3,5-trimethylbenzene	µg/L	0.5	<0.5
tert-butylbenzene	µg/L	0.5	<0.5
1,2,4-trimethylbenzene	µg/L	0.5	<0.5
sec-butylbenzene	µg/L	0.5	<0.5
p-isopropyltoluene	µg/L	0.5	<0.5
n-butylbenzene	µg/L	0.5	<0.5
Nitrogenous Compounds			
Acrylonitrile	µg/L	0.5	<0.5
2-nitropropane	µg/L	100	<100

Parameter	Units	LOR	Sample Number: SE129279.001 Sample Matrix: Water Sample Date: 2/7/14 12:00 Sample Name: GW4-1
VOCs in Water Method: AN433/AN434 (continued)			
Oxygenated Compounds			
Acetone (2-propanone)	µg/L	10	<25↑
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2
Vinyl acetate	µg/L	10	<10
MEK (2-butanone)	µg/L	10	<10
MIBK (4-methyl-2-pentanone)	µg/L	5	<5
2-hexanone (MBK)	µg/L	5	<5
Polycyclic VOCs			
Naphthalene	µg/L	0.5	<0.5
Sulphonated Compounds			
Carbon disulfide	µg/L	2	<2
Surrogates			
Dibromofluoromethane (Surrogate)	%	-	**118**
d4-1,2-dichloroethane (Surrogate)	%	-	**100**
d8-toluene (Surrogate)	%	-	**94**
Bromofluorobenzene (Surrogate)	%	-	**92**
Totals			
Total Xylenes	µg/L	1.5	<1.5
Total BTEX	µg/L	3	<3
Total VOC	µg/L	10	-
Trihalomethanes			
Chloroform (THM)	µg/L	0.5	<0.5
Bromodichloromethane (THM)	µg/L	0.5	<0.5
Dibromochloromethane (THM)	µg/L	0.5	<0.5
Bromoform (THM)	µg/L	0.5	<0.5

Parameter	Units	LOR	Sample Number SE129279.001 Sample Matrix Water Sample Date 2/7/14 12:00 Sample Name GW4-1
Volatile Petroleum Hydrocarbons in Water Method: AN433/AN434/AN410			
TRH C6-C10	µg/L	50	**100**
TRH C6-C9	µg/L	40	<40
Surrogates			
Dibromofluoromethane (Surrogate)	%	-	**105**
d4-1,2-dichloroethane (Surrogate)	%	-	**104**
d8-toluene (Surrogate)	%	-	**107**
Bromofluorobenzene (Surrogate)	%	-	**79**
VPH F Bands			
Benzene (F0)	µg/L	0.5	**0.7**
TRH C6-C10 minus BTEX (F1)	µg/L	50	**98**
TRH (Total Recoverable Hydrocarbons) in Water Method: AN403			
TRH C10-C14	µg/L	50	**720**
TRH C15-C28	µg/L	200	**1400**
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH C10-C36	µg/L	450	**2100**
TRH C10-C40	µg/L	650	**2100**
TRH F Bands			
TRH >C10-C16 (F2)	µg/L	60	**790**
TRH >C16-C34 (F3)	µg/L	500	**1400**
TRH >C34-C40 (F4)	µg/L	500	<500

Parameter	Units	LOR	Sample Number SE129279.001 Sample Matrix Water Sample Date 2/7/14 12:00 Sample Name GW4-1
PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: AN420			
Naphthalene	µg/L	0.1	<0.1
2-methylnaphthalene	µg/L	0.1	<0.1
1-methylnaphthalene	µg/L	0.1	<0.1
Acenaphthylene	µg/L	0.1	<0.1
Acenaphthene	µg/L	0.1	<0.1
Fluorene	µg/L	0.1	<0.1
Phenanthrene	µg/L	0.1	<0.1
Anthracene	µg/L	0.1	<0.1
Fluoranthene	µg/L	0.1	<0.1
Pyrene	µg/L	0.1	<0.1
Benzo(a)anthracene	µg/L	0.1	<0.1
Chrysene	µg/L	0.1	<0.1
Benzo(b&j)fluoranthene	µg/L	0.1	<0.1
Benzo(k)fluoranthene	µg/L	0.1	<0.1
Benzo(a)pyrene	µg/L	0.1	<0.1
Indeno(1,2,3-cd)pyrene	µg/L	0.1	<0.1
Dibenzo(a&h)anthracene	µg/L	0.1	<0.1
Benzo(ghi)perylene	µg/L	0.1	<0.1
Total PAH (18)	µg/L	1	<1
Surrogates			
d5-nitrobenzene (Surrogate)	%	-	**84**
2-fluorobiphenyl (Surrogate)	%	-	**82**
d14-p-terphenyl (Surrogate)	%	-	**100**
OC Pesticides in Water Method: AN400/AN420			
Alpha BHC	µg/L	0.1	<0.1
Hexachlorobenzene (HCB)	µg/L	0.1	<0.1
Beta BHC	µg/L	0.1	<0.1
Lindane (gamma BHC)	µg/L	0.1	<0.1
Delta BHC	µg/L	0.1	<0.1
Heptachlor	µg/L	0.1	<0.1
Aldrin	µg/L	0.1	<0.1
Heptachlor epoxide	µg/L	0.1	<0.1
Gamma Chlordane	µg/L	0.1	<0.1
Alpha Chlordane	µg/L	0.1	<0.1
Alpha Endosulfan	µg/L	0.1	<0.1
o,p'-DDE	µg/L	0.1	<0.1
p,p'-DDE	µg/L	0.1	<0.1
Dieldrin	µg/L	0.1	<0.1
Endrin	µg/L	0.1	<0.1
Beta Endosulfan	µg/L	0.1	<0.1
o,p'-DDD	µg/L	0.1	<0.1
p,p'-DDD	µg/L	0.1	<0.1
Endosulfan sulphate	µg/L	0.1	<0.1
o,p'-DDT	µg/L	0.1	<0.1
p,p'-DDT	µg/L	0.1	<0.1
Endrin ketone	µg/L	0.1	<0.1
Methoxychlor	µg/L	0.1	<0.1
trans-Nonachlor	µg/L	0.1	<0.1
Endrin aldehyde	µg/L	0.1	<0.1
Isodrin	µg/L	0.1	<0.1
Mirex	µg/L	0.1	<0.1

Parameter	Units	LOR	Sample Number: SE129279.001 Sample Matrix: Water Sample Date: 2/7/14 12:00 Sample Name: GW4-1
OC Pesticides in Water Method: AN400/AN420 (continued)			
Surrogates			
Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	**77**
OP Pesticides in Water Method: AN400/AN420			
Dichlorvos	µg/L	0.5	<0.5
Dimethoate	µg/L	0.5	<0.5
Diazinon (Dimpylate)	µg/L	0.5	<0.5
Fenitrothion	µg/L	0.2	<0.2
Malathion	µg/L	0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	µg/L	0.2	<0.2
Parathion-ethyl (Parathion)	µg/L	0.2	<0.2
Bromophos Ethyl	µg/L	0.2	<0.2
Methidathion	µg/L	0.5	<0.5
Ethion	µg/L	0.2	<0.2
Azinphos-methyl	µg/L	0.2	<0.2
Surrogates			
2-fluorobiphenyl (Surrogate)	%	-	**82**
d14-p-terphenyl (Surrogate)	%	-	**100**
PCBs in Water Method: AN400/AN420			
Arochlor 1016	µg/L	1	<1
Arochlor 1221	µg/L	1	<1
Arochlor 1232	µg/L	1	<1
Arochlor 1242	µg/L	1	<1
Arochlor 1248	µg/L	1	<1
Arochlor 1254	µg/L	1	<1
Arochlor 1260	µg/L	1	<1
Arochlor 1262	µg/L	1	<1
Arochlor 1268	µg/L	1	<1
Total Arochlors*	µg/L	5	<5

Parameter	Units	LOR	Sample Number: SE129279.001 Sample Matrix: Water Sample Date: 2/7/14 12:00 Sample Name: GW4-1
PCBs in Water Method: AN400/AN420 (continued)			
Surrogates			
Tetrachloro-m-xylene (Surrogate)	%	-	**77**
Trace Metals (Dissolved) in Water by ICPMS Method: AN318			
Arsenic, As	µg/L	1	**5**
Cadmium, Cd	µg/L	0.1	**0.1**
Chromium, Cr	µg/L	1	**57**
Copper, Cu	µg/L	1	**3**
Lead, Pb	µg/L	1	<1
Nickel, Ni	µg/L	1	**5**
Zinc, Zn	µg/L	5	**27**
Mercury (dissolved) in Water Method: AN311/AN312			
Mercury	mg/L	0.0001	<0.0001

QC SUMMARY

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

Mercury (dissolved) in Water **Method: ME-(AU)-[ENV]AN311/AN312**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Mercury	LB060397	mg/L	0.0001	<0.0001	0%	105%	107%

OC Pesticides in Water **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Alpha BHC	LB060198	µg/L	0.1	<0.1	NA
Hexachlorobenzene (HCB)	LB060198	µg/L	0.1	<0.1	NA
Beta BHC	LB060198	µg/L	0.1	<0.1	NA
Lindane (gamma BHC)	LB060198	µg/L	0.1	<0.1	NA
Delta BHC	LB060198	µg/L	0.1	<0.1	100%
Heptachlor	LB060198	µg/L	0.1	<0.1	100%
Aldrin	LB060198	µg/L	0.1	<0.1	105%
Heptachlor epoxide	LB060198	µg/L	0.1	<0.1	NA
Gamma Chlordane	LB060198	µg/L	0.1	<0.1	NA
Alpha Chlordane	LB060198	µg/L	0.1	<0.1	NA
Alpha Endosulfan	LB060198	µg/L	0.1	<0.1	NA
o,p'-DDE	LB060198	µg/L	0.1	<0.1	NA
p,p'-DDE	LB060198	µg/L	0.1	<0.1	NA
Dieldrin	LB060198	µg/L	0.1	<0.1	95%
Endrin	LB060198	µg/L	0.1	<0.1	125%
Beta Endosulfan	LB060198	µg/L	0.1	<0.1	NA
o,p'-DDD	LB060198	µg/L	0.1	<0.1	NA
p,p'-DDD	LB060198	µg/L	0.1	<0.1	NA
Endosulfan sulphate	LB060198	µg/L	0.1	<0.1	NA
o,p'-DDT	LB060198	µg/L	0.1	<0.1	NA
p,p'-DDT	LB060198	µg/L	0.1	<0.1	90%
Endrin ketone	LB060198	µg/L	0.1	<0.1	NA
Methoxychlor	LB060198	µg/L	0.1	<0.1	NA
trans-Nonachlor	LB060198	µg/L	0.1	<0.1	NA
Endrin aldehyde	LB060198	µg/L	0.1	<0.1	NA
Isodrin	LB060198	µg/L	0.1	<0.1	NA
Mirex	LB060198	µg/L	0.1	<0.1	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Tetrachloro-m-xylene (TCMX) (Surrogate)	LB060198	%	-	100%	93%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

OP Pesticides in Water **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dichlorvos	LB060198	µg/L	0.5	<0.5	93%
Dimethoate	LB060198	µg/L	0.5	<0.5	NA
Diazinon (Dimpylate)	LB060198	µg/L	0.5	<0.5	89%
Fenitrothion	LB060198	µg/L	0.2	<0.2	NA
Malathion	LB060198	µg/L	0.2	<0.2	NA
Chlorpyrifos (Chlorpyrifos Ethyl)	LB060198	µg/L	0.2	<0.2	114%
Parathion-ethyl (Parathion)	LB060198	µg/L	0.2	<0.2	NA
Bromophos Ethyl	LB060198	µg/L	0.2	<0.2	NA
Methidathion	LB060198	µg/L	0.5	<0.5	NA
Ethion	LB060198	µg/L	0.2	<0.2	117%
Azinphos-methyl	LB060198	µg/L	0.2	<0.2	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
2-fluorobiphenyl (Surrogate)	LB060198	%	-	108%	104%
d14-p-terphenyl (Surrogate)	LB060198	%	-	112%	122%

PAH (Polynuclear Aromatic Hydrocarbons) in Water **Method: ME-(AU)-[ENV]AN420**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB060198	µg/L	0.1	<0.1	92%
2-methylnaphthalene	LB060198	µg/L	0.1	<0.1	NA
1-methylnaphthalene	LB060198	µg/L	0.1	<0.1	NA
Acenaphthylene	LB060198	µg/L	0.1	<0.1	86%
Acenaphthene	LB060198	µg/L	0.1	<0.1	84%
Fluorene	LB060198	µg/L	0.1	<0.1	NA
Phenanthrene	LB060198	µg/L	0.1	<0.1	98%
Anthracene	LB060198	µg/L	0.1	<0.1	113%
Fluoranthene	LB060198	µg/L	0.1	<0.1	79%
Pyrene	LB060198	µg/L	0.1	<0.1	106%
Benzo(a)anthracene	LB060198	µg/L	0.1	<0.1	NA
Chrysene	LB060198	µg/L	0.1	<0.1	NA
Benzo(b&j)fluoranthene	LB060198	µg/L	0.1	<0.1	NA
Benzo(k)fluoranthene	LB060198	µg/L	0.1	<0.1	NA
Benzo(a)pyrene	LB060198	µg/L	0.1	<0.1	96%
Indeno(1,2,3-cd)pyrene	LB060198	µg/L	0.1	<0.1	NA
Dibenzo(a&h)anthracene	LB060198	µg/L	0.1	<0.1	NA
Benzo(ghi)perylene	LB060198	µg/L	0.1	<0.1	NA
Total PAH (18)	LB060198	µg/L	1	<1	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
d5-nitrobenzene (Surrogate)	LB060198	%	-	116%	104%
2-fluorobiphenyl (Surrogate)	LB060198	%	-	108%	104%
d14-p-terphenyl (Surrogate)	LB060198	%	-	112%	122%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

PCBs in Water **Method: ME-(AU)-[ENV]AN400/AN420**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Arochlor 1016	LB060198	µg/L	1	<1	NA
Arochlor 1221	LB060198	µg/L	1	<1	NA
Arochlor 1232	LB060198	µg/L	1	<1	NA
Arochlor 1242	LB060198	µg/L	1	<1	NA
Arochlor 1248	LB060198	µg/L	1	<1	NA
Arochlor 1254	LB060198	µg/L	1	<1	NA
Arochlor 1260	LB060198	µg/L	1	<1	91%
Arochlor 1262	LB060198	µg/L	1	<1	NA
Arochlor 1268	LB060198	µg/L	1	<1	NA
Total Arochlors*	LB060198	µg/L	5	<5	

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Tetrachloro-m-xylene (Surrogate)	LB060198	%	-	100%	102%

Trace Metals (Dissolved) in Water by ICPMS **Method: ME-(AU)-[ENV]AN318**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery	MS %Recovery
Arsenic, As	LB060396	µg/L	1	<1	0%	96%	93%
Cadmium, Cd	LB060396	µg/L	0.1	<0.1	0%	95%	94%
Chromium, Cr	LB060396	µg/L	1	<1	0%	97%	94%
Copper, Cu	LB060396	µg/L	1	<1	0%	102%	101%
Lead, Pb	LB060396	µg/L	1	<1	0%	97%	95%
Nickel, Ni	LB060396	µg/L	1	<1	0%	100%	96%
Zinc, Zn	LB060396	µg/L	5	<5	0%	98%	71%

TRH (Total Recoverable Hydrocarbons) in Water **Method: ME-(AU)-[ENV]AN403**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C10-C14	LB060198	µg/L	50	<50	87%
TRH C15-C28	LB060198	µg/L	200	<200	95%
TRH C29-C36	LB060198	µg/L	200	<200	95%
TRH C37-C40	LB060198	µg/L	200	<200	NA
TRH C10-C36	LB060198	µg/L	450	<450	NA
TRH C10-C40	LB060198	µg/L	650	<650	NA

TRH F Bands

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH >C10-C16 (F2)	LB060198	µg/L	60	<60	93%
TRH >C16-C34 (F3)	LB060198	µg/L	500	<500	95%
TRH >C34-C40 (F4)	LB060198	µg/L	500	<500	96%

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOCs in Water **Method: ME-(AU)-[ENV]AN433/AN434**

Fumigants

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
2,2-dichloropropane	LB060250	µg/L	0.5	<0.5	NA
1,2-dichloropropane	LB060250	µg/L	0.5	<0.5	NA
cis-1,3-dichloropropene	LB060250	µg/L	0.5	<0.5	NA
trans-1,3-dichloropropene	LB060250	µg/L	0.5	<0.5	NA
1,2-dibromoethane (EDB)	LB060250	µg/L	0.5	<0.5	NA

Halogenated Aliphatics

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dichlorodifluoromethane (CFC-12)	LB060250	µg/L	5	<5	NA
Chloromethane	LB060250	µg/L	5	<5	NA
Vinyl chloride (Chloroethene)	LB060250	µg/L	0.3	<0.3	NA
Bromomethane	LB060250	µg/L	10	<10	NA
Chloroethane	LB060250	µg/L	5	<5	NA
Trichlorofluoromethane	LB060250	µg/L	1	<1	NA
Iodomethane	LB060250	µg/L	5	<5	NA
1,1-dichloroethene	LB060250	µg/L	0.5	<0.5	121%
Dichloromethane (Methylene chloride)	LB060250	µg/L	5	<5	NA
Allyl chloride	LB060250	µg/L	2	<2	NA
trans-1,2-dichloroethene	LB060250	µg/L	0.5	<0.5	NA
1,1-dichloroethane	LB060250	µg/L	0.5	<0.5	NA
cis-1,2-dichloroethene	LB060250	µg/L	0.5	<0.5	NA
Bromochloromethane	LB060250	µg/L	0.5	<0.5	NA
1,2-dichloroethane	LB060250	µg/L	0.5	<0.5	98%
1,1,1-trichloroethane	LB060250	µg/L	0.5	<0.5	NA
1,1-dichloropropene	LB060250	µg/L	0.5	<0.5	NA
Carbon tetrachloride	LB060250	µg/L	0.5	<0.5	NA
Dibromomethane	LB060250	µg/L	0.5	<0.5	NA
Trichloroethene (Trichloroethylene,TCE)	LB060250	µg/L	0.5	<0.5	108%
1,1,2-trichloroethane	LB060250	µg/L	0.5	<0.5	NA
1,3-dichloropropane	LB060250	µg/L	0.5	<0.5	NA
Tetrachloroethene (Perchloroethylene,PCE)	LB060250	µg/L	0.5	<0.5	NA
1,1,1,2-tetrachloroethane	LB060250	µg/L	0.5	<0.5	NA
cis-1,4-dichloro-2-butene	LB060250	µg/L	1	<1	NA
1,1,2,2-tetrachloroethane	LB060250	µg/L	0.5	<0.5	NA
1,2,3-trichloropropane	LB060250	µg/L	0.5	<0.5	NA
trans-1,4-dichloro-2-butene	LB060250	µg/L	1	<1	NA
1,2-dibromo-3-chloropropane	LB060250	µg/L	0.5	<0.5	NA
Hexachlorobutadiene	LB060250	µg/L	0.5	<0.5	NA

Halogenated Aromatics

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Chlorobenzene	LB060250	µg/L	0.5	<0.5	108%
Bromobenzene	LB060250	µg/L	0.5	<0.5	NA
2-chlorotoluene	LB060250	µg/L	0.5	<0.5	NA
4-chlorotoluene	LB060250	µg/L	0.5	<0.5	NA
1,3-dichlorobenzene	LB060250	µg/L	0.5	<0.5	NA
1,4-dichlorobenzene	LB060250	µg/L	0.3	<0.3	NA
1,2-dichlorobenzene	LB060250	µg/L	0.5	<0.5	NA
1,2,4-trichlorobenzene	LB060250	µg/L	0.5	<0.5	NA
1,2,3-trichlorobenzene	LB060250	µg/L	0.5	<0.5	NA

Monocyclic Aromatic Hydrocarbons

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOCs in Water Method: ME-(AU)-[ENV]AN433/AN434 (continued)

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene	LB060250	µg/L	0.5	<0.5	115%
Toluene	LB060250	µg/L	0.5	<0.5	110%
Ethylbenzene	LB060250	µg/L	0.5	<0.5	105%
m/p-xylene	LB060250	µg/L	1	<1	108%
Styrene (Vinyl benzene)	LB060250	µg/L	0.5	<0.5	NA
o-xylene	LB060250	µg/L	0.5	<0.5	103%
Isopropylbenzene (Cumene)	LB060250	µg/L	0.5	<0.5	NA
n-propylbenzene	LB060250	µg/L	0.5	<0.5	NA
1,3,5-trimethylbenzene	LB060250	µg/L	0.5	<0.5	NA
tert-butylbenzene	LB060250	µg/L	0.5	<0.5	NA
1,2,4-trimethylbenzene	LB060250	µg/L	0.5	<0.5	NA
sec-butylbenzene	LB060250	µg/L	0.5	<0.5	NA
p-isopropyltoluene	LB060250	µg/L	0.5	<0.5	NA
n-butylbenzene	LB060250	µg/L	0.5	<0.5	NA

Nitrogenous Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Acrylonitrile	LB060250	µg/L	0.5	<0.5	NA

Oxygenated Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Acetone (2-propanone)	LB060250	µg/L	10	<10	NA
MtBE (Methyl-tert-butyl ether)	LB060250	µg/L	2	<1	NA
Vinyl acetate	LB060250	µg/L	10	<10	NA
MEK (2-butanone)	LB060250	µg/L	10	<10	NA
MIBK (4-methyl-2-pentanone)	LB060250	µg/L	5	<5	NA
2-hexanone (MBK)	LB060250	µg/L	5	<5	NA

Polycyclic VOCs

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Naphthalene	LB060250	µg/L	0.5	<0.5	NA

Sulphonated Compounds

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Carbon disulfide	LB060250	µg/L	2	<2	NA

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB060250	%	-	110%	95%
d4-1,2-dichloroethane (Surrogate)	LB060250	%	-	113%	83%
d8-toluene (Surrogate)	LB060250	%	-	91%	96%
Bromofluorobenzene (Surrogate)	LB060250	%	-	100%	99%

Totals

Parameter	QC Reference	Units	LOR	MB
Total Xylenes	LB060250	µg/L	1.5	<1.5
Total BTEX	LB060250	µg/L	3	<3

Trihalomethanes

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Chloroform (THM)	LB060250	µg/L	0.5	<0.5	94%
Bromodichloromethane (THM)	LB060250	µg/L	0.5	<0.5	NA

MB blank results are compared to the Limit of Reporting
LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample.
DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: *the absolute difference of the two results divided by the average of the two results as a percentage*. Where the DUP RPD is 'NA' , the results are less than the LOR and thus the RPD is not applicable.

VOCs in Water **Method: ME-(AU)-[ENV]AN433/AN434 (continued)**

				MB	LCS %Recovery
Dibromochloromethane (THM)	LB060250	µg/L	0.5	<0.5	NA
Bromoform (THM)	LB060250	µg/L	0.5	<0.5	NA

Volatile Petroleum Hydrocarbons in Water **Method: ME-(AU)-[ENV]AN433/AN434/AN410**

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
TRH C6-C10	LB060250	µg/L	50	<50	108%
TRH C6-C9	LB060250	µg/L	40	<40	102%

Surrogates

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Dibromofluoromethane (Surrogate)	LB060250	%	-	102%	99%
d4-1,2-dichloroethane (Surrogate)	LB060250	%	-	100%	98%
d8-toluene (Surrogate)	LB060250	%	-	99%	99%
Bromofluorobenzene (Surrogate)	LB060250	%	-	82%	100%

VPH F Bands

Parameter	QC Reference	Units	LOR	MB	LCS %Recovery
Benzene (F0)	LB060250	µg/L	0.5	<0.5	NA
TRH C6-C10 minus BTEX (F1)	LB060250	µg/L	50	<50	113%

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN083	Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples.
AN311/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN400	OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.)
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is not corrected for Naphthalene.
AN403	Additionally, the volatile C6-C9/C6-C10 fractions may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Petroleum Hydrocarbons (TPH) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependant on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN433/AN434/AN410	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	This analysis is not covered by the scope of accreditation.	QFH	QC result is above the upper tolerance
		QFL	QC result is below the lower tolerance
**	Indicative data, theoretical holding time exceeded.	-	The sample was not analysed for this analyte
^	Performed by outside laboratory.	NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

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

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here:
http://www.sgs.com.au.pv.sgsv3/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

APPENDIX E

Analytical Results Summary Tables

Table T1 – Summary of Soil Investigation Results for Heavy Metals

Sample ID	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
BH301-1	<3	0.5	11	53	5	<0.01	48	45
BH302-1	6	0.5	14	90	110	0.17	8.9	160
BH302-2	5	<0.3	13	1.6	5	0.02	0.7	3.5
BH303-1	4	0.7	13	97	66	0.07	17	260
BH303-2	6	0.3	8.6	49	21	0.05	5.6	37
BH304-1	<3	<0.3	6.3	12	8	0.01	1.9	11
BH305-1	<3	0.3	9.7	52	7	<0.01	36	33
BH305-3	7	<0.3	14	<0.5	4	<0.01	<0.5	1.9
BH306-1	6	3.4	15	**17000**	370	0.18	70	**1100**
BH307-1	10	11	75	**18000**	**1400**	1.3	94	**7400**
BH307-3	3	0.4	10	**1300**	69	0.02	5.3	100
BH308-1	<3	0.4	9.3	68	5	<0.01	51	51
BH309-1	<3	0.5	14	63	5	<0.01	50	49
BH310-1	<3	1.1	30	**500**	130	0.05	29	270
BH311-1	3	<0.3	6.4	77	70	0.16	2.6	72
BH311-2	<3	<0.3	4.1	21	20	0.07	1.0	23
BH312-1	3	<0.3	13	80	65	0.12	4.1	67
BH313-1	8	2.4	56	**1800**	710	0.87	32	**1600**
BH314-1	<3	<0.3	7.0	110	250	0.13	2.5	300
BH314-3	4	<0.3	6.6	13	22	0.02	1.9	24
SILs								
HIL B[1]	500[2]	150	500[3]	30000	1200[4]	120[5]	1200	400000
EILs[6]	100[7]	NR	250	190	1100	NR	270	400

Notes:

XXX	Bolded values indicates concentration exceeds EIL.
	Highlighted values indicates concentration exceeds HIL.

SIL	Soil investigation Levels.
HIL	Health-based investigation levels (mg/kg) as per NEPM 1999 Schedule B1 2013 Amendment.
EIL	Ecological Investigation Levels (mg/kg) as per NEPM. EILs incorporate soil physiochemical properties (pH, CEC & clay content) tested on EIL-1 to calculate ABC (ambient background concentrations)
NL	'Not Limiting' If the derived soil vapour limit exceeds the soil concentration at which the pore water phase cannot dissolve any more of the individual chemical, i.e. where the soil vapour is at equilibrium with the pore water, then the soil vapour source cannot exceed a level that would result in the maximum allowable vapour risk for the given scenario, therefore the limit is not limiting.
NR	No recommended soil assessment criteria are currently available for the indicated parameter(s).

Sample ID	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)
1	HIL B - Residential with minimal opportunity for soil access; inlcuding dwellings with fully and permenantly paved yard space such as high-rise buidlings and apartments							
2	Arsenic - HIL assumes 70% oral bioavailability. Site-specific bioavailability may be important and should be considered where appropriate (refer to NEPM 1999 Schedule B7 2013 Amendment)							
3	Thresholds are for Chromium VI. It is assumed all detected Chromium is Chromium (VI), as Chromium (III) would be too unstable to exist under normal circumstances.							
4	Lead - HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.							
5	Value shown is representative of inorganic mercury as provided in Table 1A(1) (refer to NEPM 1999 Schedule B1 2013 Amendment).							
6	EIL values are for urban residential and public open space.							
7	Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to NEPM 1999 Schedule B5c 2013 Amendment.							

Table T2 – Summary of Soil Investigation Results for TPH, BTEX and Naphthalene

Sample ID	Depth (m)	Soil Texture	Total Petroleum Hydrocarbons (mg/kg)				Benzene (mg/kg)	Toluene (mg/kg)	Ethyl benzene (mg/kg)	Total Xylenes (mg/kg)	Naphthalene (Volatile) (mg/kg)
			F1[1]	F2[2]	F3[3]	F4[4]					
BH301-1	0.05	FILL: Silty Sand & Gravel	<25	27	110	300	<0.1	<0.1	<0.1	<0.3	<0.1
BH301-2	0.3	SANDSTONE	NA	NA	NA	NA	NA	NA	NA	NA	<0.1
BH301-5	4.2	SANDSTONE	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH302-1	0.1	FILL: Silty Clay	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH303-1	0	FILL: Sand, Clay & Gravel	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH304-1	0.4	FILL: crushed Sandstone	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH304-2	0.7	FILL: Silty Sand & Gravel	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH306-1	0	FILL: Sand, Clay & Gravel	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH306-4	1.4	FILL: Sand, Clay & Gravel	<25	<25	370	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH306-6	2.4	SANDSTONE	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH307-1	0.05	FILL: Silty Sand, Clay & Gravel	34	140	450	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH307-2	0.6	FILL: Silty Sand, Clay & Gravel	<25	<25	200	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH307-3	1	Clayey SAND	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH308-1	0.05	FILL: Silty Gravel, Sand, Clay	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH308-3	1.5	FILL: Silty Gravel, Sand, Clay	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH309-1	0.05	FILL: Silty Gravel, Sand, Clay	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH309-3	1.3	FILL: Silty Gravel, Sand, Clay	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH310-1	0.2	FILL: Silty Sand & Gravel	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH311-1	1	FILL: Silty Sand & Gravel	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH312-1	0.9	FILL: Silty Sand & Gravel	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH313-1	0.8	FILL: Silty Sand & Gravel	<25	29	540	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH313-3	1.8	SANDSTONE	<25	160	490	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH314-1	0.1	FILL: crushed Sandstone	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
BH314-3	1.4	Silty SAND	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	<0.1
SILs											
HSL A & B	0 m to <1 m	Sand	45	110	NL	NL	0.5	160	55	40	3
	1 m to <2 m		70	240	NL	NL	0.5	220	NL	60	NL
	2 m to <4 m		110	440	NL	NL	0.5	310	NL	95	NL
	4 m +		200	NL	NL	NL	0.5	540	NL	170	NL
HSL A & B (Clay)	0 m to <1 m	Clay	50	280	NL	NL	0.7	480	NL	110	5
	1 m to <2 m		90	NL	NL	NL	1	NL	NL	310	NL
	2 m to <4 m		150	NL	NL	NL	2	NL	NL	NL	NL
	4 m +		290	NL	NL	NL	3	NL	NL	NL	NL
ESLs[5]		Coarse grained	180*	120*	300	2800	50	85	70	105	170
		Fine grained			1300	5600	65	105	125	45	
Management Limits[6]		Coarse grained	700	1000	2500	10000	NL	NL	NL	NL	NR
		Fine grained	800		3500		NL	NL	NL	NL	

Notes:

XXX	Bolded values indicates concentration exceeds ESL.
	Highlighted values indicates concentration exceeds HSL.

SIL	Soil investigation Level.
HSL	Health screening levels (w/w) based on Residential A developments.
ESL	Ecological screening levels (mg/kg), shown values are based for urban residential and public open space developments.
Management limits	As per Table 1 B(7) in NEPM 1999 Schedule B1 2013 Amendment.
NL	'Not Limiting' If the derived soil vapour limit exceeds the soil concentration at which the pore water phase cannot dissolve any more of the individual chemical, i.e. where the soil vapour is at equilibrium with the pore water, then the soil vapour source cannot exceed a level that would result in the maximum allowable vapour risk for the given scenario, therefore the limit is not limiting.
NA	Not analysed.
1	To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.
2	To obtain F2 subtract naphthalene from the >C10-C16 fraction.
3	F3 refers to Total Recoverable Hydrocarbon >C16-C34.
4	F4 refers to Total Recoverable Hydrocarbon >C34-C40.
5	ESLs are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability. Shown values are for urban residential and public open space.
6	Management limits are applied after consideration of relevant ESLs and HSLs.

Table T3 – Summary of Soil Investigation Results for PAH & Phenols

Sample	Polyaromatic Hydrocarbons (mg/kg)			Total Phenols (mg/kg)
ID	Carcinogenic PAHs (as Benzo[a]pyrene TEQ)	Benzo(a)pyrene	Total PAHs	
BH301-1	<0.3	<0.1	<0.8	NA
BH302-1	<0.3	<0.1	<0.8	NA
BH303-1	<0.3	<0.1	<0.8	NA
BH304-1	<0.3	<0.1	<0.8	NA
BH304-2	<0.3	<0.1	<0.8	NA
BH306-4	NA	NA	NA	0.3
BH307-1	<0.3	<0.1	<0.8	NA
BH307-2	<0.3	<0.1	<0.8	NA
BH308-1	<0.3	<0.1	<0.8	0.1
BH308-3	0.7	0.4	3.2	0.2
BH309-1	<0.3	<0.1	<0.8	0.1
BH309-3	<0.3	<0.1	<0.8	NA
BH310-1	<0.3	<0.1	<0.8	NA
BH311-1	<0.3	<0.1	<0.8	NA
BH311-2	<0.3	<0.1	<0.8	NA
BH312-1	<0.3	<0.1	<0.8	NA
BH313-1	<0.3	<0.1	<0.8	NA
BH313-3	<0.3	<0.1	<0.8	NA
BH314-1	<0.3	<0.1	<0.8	0.2
BH314-3	<0.3	<0.1	<0.8	NA
SILs				
HIL A[1]	4	NR	400	3000
ESLs[2]	NR	0.7	NR	NR

Notes:

SIL	Soil investigation Levels.
HIL	Health-based investigation levels (mg/kg).
ESL	Ecological screening levels (mg/kg) as per NEPM 1999 Schedule B1 2013 Amendment.
NR	No recommended soil assessment criteria are currently available for the indicated parameter(s).
NA	Not analysed.
1	HIL B - Residential with minimal opportunity for soil access; inlcuding dwellings with fully and permenantly paved yard space such as high-rise buidlings and apartments.
2	Shown ESL values are for urban residential and public open space.

Table T4 – Summary of Soil Investigation Results for Asbestos

Sample ID	Asbestos (% w/w)
BH302-1	<0.01
BH304-1	<0.01
BH305-1	<0.01
BH306-1	<0.01
BH307-1	>0.01
BH308-1	<0.01
BH311-1	<0.01
BH312-1	<0.01
BH313-1	<0.01
BH314-1	<0.01
SIL	
HSL	0.01%

Notes:

indicates concentration exceeds HSL.

SIL	Soil investigation Level.
HSL	Health screening levels (w/w) value is based on Residential A developments.

Table T5 – Summary of Soil Investigation Results for OCPs, OPPs & PCBs

Sample	OCPs								Total OPPs (mg/kg)	Total PCBs (mg/kg)
ID	Aldrin (mg/kg)	Dieldrin (mg/kg)	Endrin (mg/kg)	Chlordane (mg/kg)	Heptachlor (mg/kg)	DDT (mg/kg)	DDD (mg/kg)	DDE (mg/kg)		
BH301-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH302-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH303-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH304-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH305-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH306-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH307-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH308-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH309-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH311-1	<0.1	<0.2	<0.2	<0.4	<0.1	<0.2	<0.2	<0.2	ND	<1
BH311-2	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH312-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
BH313-1	<0.1	<0.2	<0.2	<0.2	<0.1	<0.2	<0.2	<0.2	ND	<1
SILs										
HIL B[1]	Total 6		10	50	6	Total 240			N.R.	1
EIL[2]	NR	NR	NR	NR	NR	180	NR	NR	NR	NR

Notes:

SIL	Soil investigation Levels.
HIL	Health-based investigation levels (mg/kg) as per NEPM 1999 Schedule B1 2013 Amendment.
EIL	Ecological Investigation Levels (mg/kg) as per NEPM.
NR	No recommended soil assessment criteria are currently available for the indicated parameter(s).
ND	Not detected.
1	HIL B - Residential with minimal opportunity for soil access; inlcuding dwellings with fully and permenantly paved yard space such as high-rise buidlings and apartments.
2	Shown EIL values are for urban residential and public open space.

Table T6 – Summary of Soil Investigation Results for VOCs

Sample ID	Trichloro-ethylene (TCE)	Perchloro-ethylene (PCE)	Vinyl chloride (Chloroethene)	trans-1,2-dichloroethene	1,1-dichloro-ethane	cis-1,2-dichloroethene	Chloroform	1,2-dichloro-ethane	1,1,1-tri-chloroethane	Bromodi-chloro-methane	1,1,2-tri-chloroethane	Bromoform	1,3,5-trimethyl-benzene	1,2,4-trimethyl-benzene
BH301-2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH301-5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH306-6	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH307-1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH307-2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH308-3	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH311-1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
SILs														
RSLs	0.91	22	0.06	150	3.3	160	0.29	0.43	8700	0.27	1.1	62	780	62
EILs	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

Notes:

All results are in units of mg/kg, unless noted; * PQLs were increased for these tests to accommodate sample interferences in the sample matrix (It was noted that this caused the PQL to exceed the SIL in some cases).

All soil assessment criteria are sourced from *National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013* , *Schedule (B1)* - Guideline on Investigation Levels for Soil and Groundwater (NEPM 2013).

SIL Soil investigation Level.

RSLs US EPA 2012, Region 9 Screening Level for residential soil (Summary Table, April 2012) – in the absence of NEPM 2013 criteria these SILs are applied as interim working levels, only.

EIL Ecological Investigation Levels (mg total contaminant/kg) as per NEPM 1999.

N.R. No recommended soil assessment criteria are currently available for the indicated parameter(s).

Table T7 – Summary of Sediment Samples Lab Results on Heavy Metal, PAH and Organotin

Sample ID	Arsenic (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Organicmg/kg													Organotin (µgSn/kg)		
									Acenaphthene	Acenaphthalene	Anthracene	Flourene	Naphthalene	Phenanthrene	Benzo(a)anthracene	Benzo(a)pyrene	Dibenzo(a,h)anthracene	Chrysene	Fluoranthene	Pyrene	Total PAHs	Monobutyl tin	Dibutyl tin	Tributyl tin
SS1	**20**	0.7	**100**	**160**	**160**	**0.48**	13	**520**	**0.1**	<0.1	<0.1	<0.1	<0.1	**0.3**	**1**	**1**	<0.1	**0.4**	1	**0.9**	**6**	<1	19	**45**
SS2	13	<0.3	42	**72**	**85**	**0.21**	5.9	**240**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	0.2	0.2	1	<1	8.8	**17**
SS3	16	0.7	**95**	**130**	**150**	**0.48**	12	**520**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.3	<0.1	0.2	0.2	0.3	2	<1	12	**16**
SS4	17	0.7	**100**	**140**	**160**	**0.47**	13	**560**	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.3	<0.1	0.2	0.3	0.3	2	<1	12	**15**
SILs																								
ISQG-Low	20	1.5	80	65	50	0.15	21	200	0.016	0.044	0.085	0.019	0.16	0.24	0.261	0.43	0.063	0.384	0.6	0.665	4	NR	NR	5
ISQG-high	70	10	370	270	220	1	52	410	0.5	0.64	1.1	0.54	2.1	1.5	1.6	1.6	0.26	2.8	5.1	2.6	45	NR	NR	70

Notes:

XXXXX Highlighted values indicates concentration exceeds the adopted ISQG-Low

XXXXX Bold and highlighted values indicates concentration exceeds the adopted ISQS-high.

SIL Soil investigation Levels.

ISQG Interim sediment quality guideline, as per Table 3.5.1 in Chapter 3 of An Introduction to the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 4A (ANZECC 2000).

NR No recommended soil assessment criteria are currently available for the indicated parameter(s).

Table T8 – Summary of Groundwater Investigation Results - Heavy Metals, BTEX, TRH and Phenols

Sample ID	Heavy Metals								BTEX					TRHs				Total Phenolics
	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Benzene	Toluene	Ethylbenzene	o-xylene	m/p-xylene	F1*	F2**	F3 ($>C_{16}$-C_{34})	F4 ($>C_{34}$-C_{40})	
GW1-1	<1	<0.1	<1	<1	<1	<0.1	47	69	<0.5	1.1	<0.5	<0.5	<1	<50	<60	<500	<500	NA
GW2-1	<1	6.7	<1	310	<1	<0.1	88	2500	<0.5	<0.5	<0.5	<0.5	<1	<50	<60	<500	<500	0.01
GW3-1	<1	0.2	<1	2	<1	<0.1	62	120	<0.5	<0.5	<0.5	<0.5	<1	<50	<60	<500	<500	<0.01
GW5-1	1	<0.1	<1	11	1	<0.1	33	78	<0.5	<0.5	<0.5	<0.5	<1	<50	<60	1600	<500	NA
GW4-1	5	0.1	57	3	<1	<0.1	5	27	0.7	0.9	<0.5	<0.5	<1	98	790	1400	<500	NA
GIL																		
GIL (Fresh Water)	24 as AS(III) 13 as AS(V)	0.2	N.R. (Cr III) 1[1] (Cr VI)	1.4	3.4	0.06[3]	11	8[1]	950	NR	NR	350	200	N.R.	N.R.	N.R.	N.R.	320
GIL (Marine Waters)	NR	0.7	27 (Cr III) 4.4 (Cr VI)	1.3	4.4	0.1[3]	7	15[1]	500[1]	NR	NR	NR	NR	NR	NR	NR	NR	400
HSL A & B [2]	NR	NR	NR	NR	NR	NR	NR	NR	800[2]	NL[2]	NL[2]	NL	NL	1000[2]	1000[2]	NR	NR	NR

Notes: All results are in units of µg/L.

Highlighted values indicates concentration exceeds GIL.

GIL Groundwater Investigation Level. All GIL values sourced from *National Environment Protection (Assessment of Site Contamination) Measure 1999 – Amendment 2013* , *Schedule (B1)* - Guideline on Investigation Levels for Soil and Groundwater, (NEPC) Investigation levels apply to Fresh Waters for typical slightly-moderately disturbed systems.

HSL Health-based Screening Level.

NR No recommended soil assessment criteria are currently available for the indicated parameter(s).

NA Not analysed.

* To obtain F1 subtract the sum of BTEX concentrations from the C6-C10 fraction.

** To obtain F2 subtract Naphthalene from the >C10-C16 fraction.

1 Indicated threshold value may not protect key species from chronic toxicity, refer to ANZECC & ARMCANZ (2000) for further guidance.

2 NEPM (2013) Table 1A(4) Groundwater HSL A & HSL B for vapour intrusion at the contaminant source depth ranges in sands 2m to <4m, considered most representative of fractured bedrock aquifer.

3 Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZECC & ARMCANZ (2000) for further guidance.
Note: Laboratory reporting limit for Mecury dissolved in water is 0.1 µg/L.