Tian An Enfield Pty Ltd
Environmental Site Investigation

Mitchell Street,
Enfield, NSW

28 June 2017

52680/109132

JBS&G

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List of Abbreviations

A list of the common abbreviations used throughout this report is provided below.

ACM	Asbestos containing material
AEC	Potential Area of Environmental Concern
AHD	Australian Height Datum
As	Arsenic
ASLP	Australian Standard Leaching Procedure
Bgs	below ground surface
B(a)P	Benzo(a)pyrene
BTEX	Benzene, toluene, ethylbenzene and xylenes
Cd	Cadmium
COPC	Contaminant Of Potential Concern
Cr	Chromium
Cu	Copper
DQOs	Data Quality Objectives
EIL/ESL	Ecological investigation level/Ecological screening level
EPA	NSW Environment Protection Authority
ESA	Environmental site assessment
GIL	Groundwater Investigation Level
Ha	Hectare
Hg	Mercury
HIL/HSL	Health-based investigation level/Health-based screening level
JBS&G	JBS&G Australia Pty Ltd
LOR	Limit of Reporting
Ni	Nickel
OCP	Organochlorine Pesticides
OPP	Organophosphate Pesticides
PAHs	Polycyclic aromatic hydrocarbons
Pb	Lead
RPD	Relative Percent Difference
TRH	Total Recoverable Hydrocarbons
Zn	Zinc

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Tian An Enfield Pty Ltd (Tian, the client) to conduct a soil and groundwater environmental assessment. The site is located at 4 Mitchell Road, Enfield, NSW, and is legally identified as Lot 3 DP585664.The site location and site layout are presented on **Figure 1** and **Figure 2** respectively.

It is understood that the site is proposed to undergo development for a medium density residential land use.

The objective of the investigation is to assess the potential for contamination based on current and historical site activities, to draw preliminary conclusions of the potential contamination status of the site and to assess potential soil and groundwater issues which may affect the site's use for residential purposes.

The scope of work comprised a review of the Phase 1 Environmental Site Assessment (JBS Environmental, 2011) and a soil and groundwater investigation programme outside of the existing building footprint.

Based on the scope of work and subject to the limitations in **Section 12**, the following summarises the findings and conclusions of the assessment:

- The site remained vacant until the construction of the present day building circa 1986. The surrounding land use was predominantly residential in nature except for the former quarry situated immediately west of the site. The quarry is visible in a 1930 aerial image and was filled in the 1980's and converted to a park (Henley Park);
- During investigations, fill material was encountered at all sampling locations ranging from 0.4 to 1.2 m bgs. Fill material generally comprised road base, gravelly sand underlain by clayey silt or gravelly clay with trace levels of sand inclusions in road way areas. In grassed / vegetated or garden bed areas the fill was generally found to consist sandy silt and underlain by gravelly silty clay or gravelly sandy clay with organic matter inclusions;
- A number of soil samples representative of fill material were recovered and analysed for a range of identified contaminants of potential concern (COPC) including heavy metals, TRH/BTEX, PAH, OCPs, PCBs and asbestos;
- Four existing groundwater wells were sampled for a range of contaminants of potential concern (COPC) including heavy metals, TRH/BTEX, PAH and phenols; and
- Laboratory analytical results indicate all other COPCs were below the laboratory limit of reporting (LOR) or the adopted human health based site assessment criteria, except for:
    - In one, near surface sample the concentration of lead exceeded the adopted health and ecological site soil assessment criteria (BH10). The location is in a landscaped mound and is likely imported fill. The lateral and vertical extent of the lead exceedance has not been identified and remains a data-gap; and
    - Groundwater investigations identified copper, nickel and zinc above site criteria for fresh water ecosystems, however, it is considered the concentrations are representative of regional groundwater and not related to contamination of the site. There is no known beneficial use of groundwater on the site or in the surrounding area.

Based on the findings of the investigation, it is recommended that prior to site redevelopment the fill materials present on site be fully characterised to support appropriate management during construction. During further site investigations, the low potential for landfill gas migrating onto the site should be assessed by appropriate sampling.

1. Introduction

1.1 Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Tian An Enfield Pty Ltd (Tian, the client) to conduct a soil and groundwater environmental investigations. The site is located at 4 Mitchell Road, Enfield, NSW, and is legally identified as Lot 3 DP585664.

It is understood that an assessment is required to ascertain the suitability of the site for residential development.

In 2011 JBS Environmental undertook a Phase 1 Environmental Sie Assessment of the site (JBS 41670-17108, June 2011). It was recommended that a Phase 2 soil, groundwater and landfill gas investigation be undertaken and the investigations are reported herein.

This investigation has been developed in accordance with guidelines made or approved by the NSW Environment Protection Authority (EPA) and relevant Australian Standards.

1.2 Objectives

The objective of the investigation is to assess the potential for contamination based on current and historical site activities, to draw preliminary conclusions of the potential contamination status of the site and to assess potential soil and groundwater issues which may affect the site's use for residential purposes.

1.3 Scope of Work

The following scope of works was undertaken:

- A review of readily available site history and background information to identify potential areas of environmental concern (AECs) and associated contaminants of potential concern (COPC);
- A preliminary soil and groundwater investigation program;
- Comparison of collected data against relevant EPA endorsed criteria in relation to assessment, from a site contamination perspective, of land use suitability; and
- Complete a preliminary assessment of whether the investigation areas are suitable, from a contamination perspective, for residential purposes.

2. Site Condition and Surrounding Environment

2.1 Site Identification

The location of the site is shown in **Figure 1**. The details are summarised in **Table 2.1** and described in detail in the following sections.

Table 2.1: Summary Site Details

Address	4 Mitchell St, Enfield, NSW
Lot and DP	Lot 3 in DP585664
Area (m^2)	Approximately 1.2 ha
Local Government Authority	Municipality of Burwood
Current/Proposed Land Use	Commercial -> Residential
Zoning	Special Use

2.2 Site Description

The site layout is shown on **Figure 2** and comprises a large multi-use building, access driveways and car parking areas, some small garden beds and grassed areas. The main building houses the Vision Australia offices, a cafeteria, a library, a warehouse and an underground carpark.

At the entry/exit point of the underground carpark was a small concrete slab understood to be the former locations of a diesel above ground storage tank (AST).

2.3 Surrounding Land-use

The surrounding land uses have been identified as follows:

- North – Residential properties with Llangollan Avenue further north;
- East – Residential properties bound the site, with Burwood Road further east;
- South – Mitchell street with residential properties further south; and
- West – Henley Park.

2.4 Geology

Review of the regional geological map (DMR 1983[1]) indicated the site is underlain by Middle Triassic Wianamatta group shale comprising carbonaceous claystone, laminite, fine to medium-grained lithic sandstone and rare coal.

The local relief of 30 m with slopes usually of <5% and broad rounded crests and ridges. The area generally consists of cleared eucalypt woodland and tall open forest (wet schlerophyll forest).

Soils in the area generally comprise shallow and moderately deep, (<100 cm), red and brown podzolic soils on crests, upper slopes and well drained areas; with deep (150- 300cm) yellow podzolic soils and soloths on lower slopes and in areas of poor drainage.

Limitations include moderately reactive and highly plastic subsoil with low soil fertility and poor soil drainage.

2.5 Topography

A review of the Natural Resources Atlas[2] topographic map showed that the site has an approximate height of 20 m Australian Height Datum (AHD). The site has a gentle fall to the west towards Henley Park. During the site inspection, there was evidence of minor fill material, mostly in garden beds, having been used at the site, with the site levels being similar to that of surrounding properties. Some minor cut and fill was also evident in the front visitor carpark area.

[1] Sydney Geological Series Sheet S1 56-5. Department of Mineral Resources, 1983 (DMR 1983).
[2] New South Wales Natural Resource Atlas, NSW Government

2.6 Hydrology

Given the currently mostly sealed nature of the site, precipitation is expected to flow along the gutters and drains into the stormwater drains along Mitchell St to the south and Baker St to the north. In the grassed areas and small garden beds, rainwater is expected to infiltrate the relatively permeable surface soils.

The Cooks River is approximately 900 m south of the site located in the Whiddon Reserve. The Cooks River flows south east eventually joining Botany Bay.

2.7 Hydrogeology

Registered groundwater bore information was obtained from the NSW Office of Water (OW, 2016[3]) database (**Appendix A**). There are no registered bores located within a 500 m radius of the site.

Based on local topography, groundwater flow is anticipated to be to the south towards the Cooks River. Groundwater beneath the site is likely to be > 3.5 m below ground surface and within alluvial soils or confined to zones of relatively higher permeability (i.e. fractures in the weathered shale)

2.8 Acid Sulfate Soils

A review of the Australian Soil Resource Information System (ASRIS 2014) indicates that the site is located within an area of low probability of acid sulfate soils.

[3] NSW Govt. Office of Water, http://allwaterdata.water.nsw.gov.au/water.stm , accessed 12th September 2016 (OW 2016)

3. Site History

3.1 Aerial Photographs

A review of aerial photograph (JBS 41670-17108, June 2011) indicated that:

- In 1930 the site was vacant land, with the general area mostly residential houses. A large excavation, assumed to be a quarry/brick pit, was located to the west of the site in the area that is now Henley Park.
- By 1982 the quarry/pit to the west of the site appeared to have been partially filled. The surrounding residential areas appeared similar to the previous photograph.
- In 1986 the current Vision Australia building had been partially constructed. The quarry/pit had been completely backfilled to form Henley Park. The surrounding residential areas appeared similar to the previous photograph.
- In 2004 the site and surrounding areas appeared similar to the previous photograph with some additional construction observed on the Vision Australia building.

In relation to Henley Park, part of the park was a brick works, which closed in 1958. The site remained unused until 1966 when it was filled and subsequently landscaped (BDHS, 2010)[4].

3.2 Title Details

A historic title search was conducted for the site (JBS 41670-17108, June 2011) and indicates title holders as tabulated below.

Year	Title Holder
1917	Rupert Cook's Brickworks Limited
1963	Rupert Cook's Brickworks Pty. Limited
1963	Parks Developments Pty. Limited
1966	The Council of the Municipality of Burwood
1971	Leased by Substation Premises no 3134 to the Sydney County Council
1982	Royal Blind Society of New South Wales
1984	Leased by Substation Premises no 3622 to the Sydney County Council
2003	Part leased, level 1, library building to the Fred Hollows Foundation
2006	RBS RVIB. VAF Limited
2007	Vision Australia
2009	Vision Australia Limited

3.3 EPA Records

A search of the NSW EPA's public register maintained under the Protection of the Environment Operations Act 1997 (POEO Act) was undertaken for the subject site and surrounding properties. The results of the search are presented in **Appendix B**. The search identified that there were no current or former prevention, clean-up or prohibition notices for the site.

3.4 Australian and NSW Heritage Register

A search of the Australian Heritage Trust database and the NSW Heritage Inventory was undertaken (JBS 41670-17108, June 2011), and the search did not identify the presence of any items of national or state significance on or in the vicinity of the site.

[4] Burwood and District Historical Society Inc. http//dsweb.com.au/bhs/places accessed2/6/2001

3.5 WorkCover Dangerous Goods Database

A search of historical Dangerous Goods records held by WorkCover (JBS 41670-17108, June 2011) did not located any records pertaining to the site.

4. Conceptual Site Model

4.1 Areas of Environmental Concern

Based on the site history review and site inspection, the areas of environmental concern and associated potential contaminants of concern have been identified at the site, as noted in **Table 4.1.**

Table 4.1 Areas of Environmental Concern and Associated Contaminants of Potential Concern

Area of Environmental Concern (AEC)	Contaminant of Potential Concern (COPC)
Fill material along the western side of the site. Groundwater along the western boundary. Surface soils and groundwater in the vicinity of the former AST. Fill material in garden beds. Landfill gases within fill material along the western side of the site.	***Soil Samples*** Heavy metals TRH/BTEX/PAH/Phenols OCPs/OPPs PCBs Asbestos ***Groundwater Wells*** Heavy metals TRH/BTEX/PAHs/Phenols Landfill gas

4.2 Potentially Contaminated Media

Fill material is a potentially contaminated media based upon:

- Imported fill soils of unknown composition distributed across the site has the potential to be contaminated based on the unknown origin and hence previous use of the fill; and
- Dependent upon the leachability of potential contaminants within fill material and surface soils, as well as the location of an AST in the northern portion of the site, the migration of contaminants into the underlying subsurface soils and groundwater may occur.

4.3 Potential for Migration, Exposure Pathways and Receptors

Contaminants generally migrate from a site via a combination of windblown dusts, rainwater infiltration, groundwater migration and surface water runoff. The potential for contaminants to migrate is a combination of:

- The nature of the contaminants (solid/liquid and mobility characteristics);
- The extent of the contaminants (isolated or widespread);
- The location of the contaminants (surface soils or at depth); and
- The site topography, geology, hydrology and hydrogeology.

The potential contaminants of concern identified as part of the site history review and site inspection are in solid and liquid form. Most the site surface soils are sealed beneath the building or carpark and drive areas. The remaining surface areas are well vegetated. Therefore, the potential for the migration of air-borne contaminants from the site is not significant.

The potential for migration via surface water is limited by the vegetated nature of the unsealed areas and the relatively impermeable nature of the sealed areas of the site.

The permeability of the surface soils in the unpaved areas of the site may result in a potential migration pathway via groundwater movement, if impacted soils are encountered at the site. As most the site surface is paved however, rainfall infiltration is expected to be minor. This reduces the potential for vertical contaminant migration through surface soils.

Given the presence of the landfill beneath Henley Park to the west of the site and the lack of available information about the material used to fill the former brick pit, there is the potential for landfill gases that may be being generated in the landfill to have migrated onto the site. The

principal gas generated by landfills is methane but other gases and vapours may have been generated depending upon materials present within the landfill.

4.4 Potential Exposure Pathways

Based on the COPC identified in various media as discussed above, the exposure pathways for the site include:

- Dermal;
- Ingestion; and
- Inhalation.

Due to the potential presence of impacted soil/fill on ground surfaces in areas of the site that may be accessed by future workers, dermal exposure must be considered a potential exposure pathway. In the event that dust is generated, ingestion and inhalation are considered to be potential exposure pathways.

As groundwater is not anticipated to be extracted under the proposed land use, dermal contact and ingestion of groundwater is considered to be unlikely. However, dependent on the depth to groundwater and the extent of contamination in near surface soils/fill, there is a potential for exposure to groundwater during future subsurface activities.

4.4.1 Receptors

Potential receptors of environmental impact present within the site which will be required to be addressed with respect to the suitability of the site for the proposed use include:

- Excavation/construction/maintenance workers conducting activities at the site, who may potentially be exposed to COPCs through direct contact with impacted soils and/or groundwater present within excavations and/or inhalation of dusts/fibres associated with impacted soils;
- Future occupants/users of the site may potentially be exposed to COPCs through direct contact with impacted soils and/or ingestion of impacted soils and/or inhalation of dusts / fibres associated with impacted soils; and/or
- Offsite sensitive receptors of groundwater; and/or
- Onsite ecological receptors on vegetated areas of the site.

4.5 Preferential Pathways

For the purpose of this assessment, preferential pathways have been identified as natural and/or man-made pathways that result in the preferential migration of COPCs as solids, liquids or gases.

Man-made preferential pathways are generally associated with fill materials, including backfill around utility trenches. Fill materials are anticipated to have a higher permeability than the underlying natural soil and/or bedrock.

5. Sampling and Analysis Plan

5.1 Data Quality Objectives

Data Quality Objectives (DQOs) have been developed for the investigation, as discussed in the following sections.

5.1.1 State the Problem

Potential contamination may exist at the site as presented in the conceptual site model (**Section 4**). No environmental sampling has been undertaken for the site and, as such, preliminary characterisation is required for the site to support redevelopment.

5.1.2 Identify the Decision

Based on the decision making process for assessing urban redevelopment sites detailed in DEC (2006), the following decisions must be made:

- Are there any unacceptable risks to likely future onsite receptors from soil?
- Are there any unacceptable human health and ecological risks present in groundwater underlying the site?
- Are there any potential risks from hazardous ground gases on site?
- Are there any impacts of chemical mixtures?
- Is there any evidence of, or potential for, migration of contaminants from the site?
- Is a site management strategy required?

5.1.3 Identify Inputs to the Decision

Inputs identified to provide sufficient data to make the decisions nominated above include:

- A review of available historical information;
- Physical observations and interpretation of fill and natural material through the collection of soil samples and laboratory chemical analysis results;
- Development of appropriate assessment criteria for evaluation of soil and groundwater impacts;
- Laboratory analysis of soil and groundwater samples of potentially contaminated media for COPC;
- Ground gas data as collected by sampling monitoring wells; and
- Confirmation that data generated by sample analysis are of an acceptable quality to allow reliable comparison to assessment criteria by assessment of quality assurance / quality control as per the data quality indicators established in **Section 5.1.6**.

5.1.4 Define the Study Boundaries

The study area is within Lot 3 in DP585664, as shown on **Figure 2**.

The vertical extent of the study will comprise:

- Soil – approximately 0.3 m into the natural soil or to a maximum of 2 m depth, whichever is shallower;
- Groundwater – monitoring wells installed to depths of approximately 2 m below the standing water table or a maximum of 8 m bgs (whichever is shallower); and

- Ground gases - the maximum depth of groundwater monitoring wells used for the investigation.

The current study does not include assessment of temporal changes in identified COPCs which is beyond the scope of this investigation. Therefore, results will be reflective of conditions at the time of the assessment.

5.1.5 Develop a Decision Rule

Soil and groundwater analytical data was assessed against NSW EPA endorsed criteria as identified in **Section 6**.

Statistical analyses of the data was undertaken, if required, in accordance with relevant guidance documents. The following statistical criteria was adopted:

- The upper 95% confidence limit on the average concentration for each analyte (calculated for samples collected from consistent soil horizons, stratigraphy or material types) must be below the adopted criterion;
- No single analyte concentration shall exceed 250% of the adopted criterion; and
- The standard deviation of the results must be less than 50% of the criterion.

The decision rules adopted to answer the decisions identified in **Section 5.1.2** are summarised in **Table 5.1**.

Table 5.1 Summary of Decision Rules

Decisions Required to be Made	Decision Rule
Are there any unacceptable human health risks from soils underlying the site?	Soil analytical data compared against appropriate criteria. Statistical analyses of the data in accordance with relevant guidance documents, if appropriate, to facilitate the decisions. The following statistical criteria were adopted with respect to soils: Either: the reported concentrations are all below the site criteria; Or: the 95% upper confidence limit (UCL) of the average concentration for each analyte must be below the adopted site criterion; no single analyte concentration exceeds 250% of the adopted site criterion; and the standard deviation of the results must be less than 50% of the site criterion. If the statistical criteria is satisfied, the decision is No. If the statistical criteria is not satisfied, the decision is Yes.
Are there any unacceptable human health and ecological risks present in groundwater underlying the site?	Groundwater analytical data was compared against appropriate criteria to evaluate the following occurrences: The concentration of the contaminant in groundwater is, or will foreseeably be, above the appropriate criteria and will remain that way; OR, there is separate-phase contamination of groundwater. If the criteria is satisfied, the answer to the decision is yes. If the criteria are not satisfied, the answer to the decision is no.
Are there any potential risks from hazardous ground gases on site?	Soil gas data would be compared to criteria provided in Guideline for the Assessment and Management of Sites Impacted by Hazardous Ground Gases, NSW EPA 2012, where applicable. If the collected data exceeds the applicable criteria, the answer to the decision is Yes. If the collected data was less than the applicable criteria, the answer to the decision is No.
Are there any impacts from chemical mixtures?	Are there more than one group of contaminants present which increase the risk of harm? If there is, the decision is Yes. Otherwise, the decision is No.

Decisions Required to be Made	Decision Rule
Is there any evidence of, or potential for, migration of contaminants from the site?	Is impacted groundwater or hazardous ground gases potentially migrating from site? If yes, the decision is Yes. Otherwise, the decision is No.
Is a site management strategy required?	Is the answer to any of the above decisions Yes? If yes, a site management strategy is required. If no, a site management strategy is not required. The requirement for site management can be precluded by remediation of the areas of environmental impact that causes a site decision to be yes.

5.1.6 Specific Limits on Decision Errors

This step is to establish the decision maker's tolerable limits on decision errors, which are used to establish performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NSW OEH[5], NEPC (2013)[6], ANZECC/ARMCANZ (2000)[7], DEC (2007)[8], appropriate indicators of data quality (DQIs used to assess quality assurance / quality control) and standard JBS&G procedures for field sampling and handling.

To assess the usability of the data prior to making decisions, the data will be assessed against pre-determined DQIs for to precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS parameters).

The pre-determined DQIs established for the project are discussed below in relation to the PARCCS parameters, and are shown in **Table 5.2**.

- **Precision** - measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** - measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** – expresses the degree which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** - expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; and ensuring analysing laboratories use consistent analysis techniques; and reporting methods.

[5] NSW Office of Environment and Heritage

[6] National Environment Protection (Assessment of Site Contamination) Measure 2013, Amendment No. 1 2013, National Environment Protection Council (NEPC 2013)

[7] Australian and New Zealand Guidelines for Fresh and Marine Water Quality Volume 1 2000, Australian and New Zealand Environment and Conservation Council (ANZECC/ARMCANZ 2000)

[8] Guidelines for the Assessment and Management of Groundwater Contamination 2007, Department of Environmental and Conservation (DEC 2007)

- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted site assessment criteria.

Table 5.2: Summary of Data Quality Indicators

Data Quality Indicators	Frequency	Data Quality Criteria
Precision		
Split duplicates (intra laboratory)	1 / 20 samples	<50% RPD[1]
Blind duplicates (inter laboratory)	1 / 20 samples	<50% RPD[1]
Laboratory Duplicates	1 / 20 samples	<50% RPD[1]
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130%
Representativeness		
Sampling appropriate for media and analytes	All samples	-[2]
Samples extracted and analysed within holding times.	-	Soil: organics (14 days), inorganics (6 months)
Laboratory Blanks	1 per lab batch	<LOR
Trip spike	1 per lab batch	70-130% recovery
Storage blank	1 per lab batch	<LOR
Rinsate sample	1 per sampling event when non-disposable sampling equipment used/media	<LOR
Comparability		
Standard operating procedures for sample collection & handling	All samples	All samples
Standard analytical methods used for all analyses	All samples	NATA accreditation
Consistent field conditions, sampling staff and laboratory analysis	All samples	All samples[2]
Limits of reporting appropriate and consistent	All samples	All samples[2]
Completeness		
Sample description and COCs completed and appropriate	All samples	All samples[2]
Appropriate documentation	All samples	All samples[2]
Satisfactory frequency and result for QC samples		95% compliance
Data from critical samples is considered valid	-	Critical samples valid
Sensitivity		
Analytical methods and limits of recovery appropriate for media and adopted Site assessment criteria	All samples	LOR<= Site assessment criteria

[1] If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgment will be made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

[2] A qualitative assessment of compliance with standard procedures and appropriate sample collection methods will be completed during the DQI compliance assessment.

5.1.7 Optimise the Design of Obtaining Data

Based on the restricted access under existing, occupied buildings, JBS&G completed a limited soil and groundwater investigation, with assessments conducted at 10 accessible locations of the site.

5.2 Soil Sampling Methodology

Soil sampling was undertaken in conjunction with geotechnical investigations conducted by Douglas and Partners. Selected soil samples were collected during the geotechnical investigation drilling, as well as hand auguring in landscape areas. A total of 10 soil bores were investigated outside of the building footprint. Soil sampled were collected at near surface (0-0.2 m), 0.5 m and then at 1 m

intervals to a maximum depth of 2 m below ground surface (mbgs) or 0.5 m into natural materials, whichever was shallower. During the collection of soil samples, features such as seepage, discolouration, staining, odours and other indicators of contamination were noted on the drilling logs (**Appendix C**). Seven of these samples were selected for analysis based on observations during sample collection.

Collected samples were immediately transferred to laboratory supplied sample jars. The sample jars were transferred to a chilled ice box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples to the testing laboratory. Preservation of the primary soil and QA/QC samples obtained during this investigation was completed in accordance with the protocols outlined in NEPC 2013. Based upon field observations, samples were analysed in accordance with the laboratory schedule in **Table 5.3**.

Not all samples collected were analysed. All samples remain at the primary laboratory for a period of two months for possible future analysis (subject to holding times), if required, following the receipt of sample results.

5.2.1 Field PID Screening

Soil samples were screened onsite during the works using a photo-ionisation detector (PID) to assess the potential presence of VOCs. Samples obtained for PID screening were placed in a sealed plastic bag for a period of approximately 5 minutes to equilibrate, prior to a PID being attached to the bag. Readings were then monitored for a period of approximately 1 minute or until values stabilised and the stabilised/highest reading was recorded on the borehole logs.

5.3 Groundwater Installation and Sampling Methodology

During the soil investigation, four groundwater monitoring wells were identified on the site. It is understood the wells were installed in late 2016.

It was observed that the wells were constructed from 50 mm uPVC screen and casing, combined with a lockable cap and steel gatic cover.

Prior to sampling, the monitoring wells were developed and allowed to settle for a minimum of 3 days after development. The monitoring wells were then gauged and sampled. Due to the depth to groundwater, the wells were sampled using dedicated, disposable bailers. Field parameters of pH, conductivity, redox and temperature were assessed.

Collected groundwater samples were immediately filtered (as necessary, e.g. for metals analysis) and/or transferred to laboratory supplied sample bottles. The sample containers were transferred to a chilled iced box for sample preservation prior to and during shipment to the testing laboratory. A chain-of-custody form was completed and forwarded with the samples. Samples were analysed in accordance with the laboratory schedule in **Table 5.3**.

5.4 Duplicate and Triplicate Sample Preparation

At selected sample points, sufficient soil was collected to provide a primary, duplicate and triplicate sample.

The collected soil sample was divided into three samples with minimal disturbance to reduce the potential for loss of volatiles and placed in three clean glass jars and sample bags as appropriate. Soil samples were not homogenised to minimise the loss of volatiles.

Each sample was labelled with primary, duplicate or triplicate sample identification before being placed in the same chilled esky for transport to the laboratory.

5.5 Laboratory Analyses

JBS&G contracted Eurofins|MGT Australia (Eurofins) at Lane Cove, NSW, as the primary laboratory for the required analyses, and Envirolab Services Pty Ltd (Envirolab) as the secondary laboratory.

Both laboratories are NATA registered for the required analyses. In addition, the laboratories were required to meet JBS&G internal QA/QC requirements. Laboratory analysis of samples was conducted as summarised in **Table 5.3**.

Table 5.3 Analytical Schedule

Sample Type	No. of Sampling Locations	Analyses (exc. QA/QC)
Soil	10 soil bores	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 7 samples TRH/BTEX – 7 samples PAH/Phenols – 3 samples OCPs/OPPs – 3 samples PCBs – 3 samples Asbestos – 3 samples (500 mL per NEPC 2013)
Groundwater	4 locations	Heavy metals (As, Cd, Cr, Cu, Hg, Ni, Pb, Zn) – 4 samples TRH/BTEX/PAHs/Phenols – 4 samples

In addition to the above analyses, for QA/QC purposes field duplicates and triplicates were analysed at a rate of 1/20 primary samples. Rinsate samples were obtained from non-disposable sampling equipment, a single trip spike and single trip blank accompanied the soil sampling event.

6. Assessment Criteria

6.1 Regulatory Guidelines

The investigation was undertaken with consideration to aspects of the following guidelines, as relevant:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999*, National Environment Protection Council, 2013 (NEPC 2013) Ecological Screening Levels (ESLs) for residential setting;
- NEPC (2013) Management Limits for residential settings;
- NEPC (2013) Health Screening Levels (HSLs) for vapour intrusion under residential settings;
- *CRCCARE Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater*, 2011, Friebel and Nadebaum (CRCCARE 2011) Health Screening Levels for direct contact to semi- and non-volatile TPH fractions as based on absence of criteria for exposure pathways in NEPC (2013);
- *Contaminated Sites: Sampling Design Guidelines*, NSW EPA, 1995 (EPA 1995);
- *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*, NSW OEH, 2011 (OEH 2011);
- *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme, 2nd Edition*, NSW EPA, 2006 (DEC 2006);
- *Contaminated Sites: Guidelines on Duty to Report Contamination under the Contaminated Land Management Act 1997*, NSW Department of Environment and Climate Change, June 2009 (DECC 2009);
- NEPC (2013) Groundwater Investigation Levels (GILs) for fresh slightly to moderately disturbed systems (fresh water);
- NEPC (2013) Groundwater Investigation Levels (GILs) for drinking water;
- *Contaminated Sites: Guidelines for the Assessment and Management of Groundwater Contamination*, NSW Department of Environment and Conservation, March 2007 (DEC 2007);
- *Australian and New Zealand guidelines for fresh and marine water quality, Volume 1 – The Guidelines*, Australia and New Zealand Environment and Conservation Council (ANZECC), 2000; and
- *Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy.* National Health and Medical Research Council (NHMRC), National Resource Management Ministerial Council (NRMMC), 2011, Commonwealth of Australia, Canberra (NHMRC/NRMMC 2011).

6.2 Assessment Criteria

6.2.1 Soil Investigation Criteria

As per the decision process for assessment of urban development site (DEC 2006), a set of health and ecological assessment thresholds derived from NEPC (2013) or other EPA approved guidelines was used for evaluation of site contamination data collected for this assessment. Residential land use with minimum opportunities for soil access was considered the most appropriate land use informing the site assessment criteria. The site soil assessment criteria is presented on **Table A** and summarised as follows:

- Health based investigation levels (HILs) for residential land use with minimum opportunities for soil access (HIL B);

- Health screening levels (HSLs) for vapour intrusion for residential land use, clay (HSL B);
- Management limits for TRH fractions, residential land use, fine soils;
- HSLs for asbestos in soil for residential land use with minimum opportunities for soil access (HSL B);
- Ecological investigation levels for residential land use with minimum opportunities for soil access, site specific; and
- Ecological screening levels (ESLs) for residential land use with minimum opportunities for soil access, fine soils.

EILs were calculated via the summing of ambient background concentrations (ABC) and added contaminant limits (ACL), based on soil characteristics of the site, as presented in Table A. ABCs were based on Olszowy et al (1995)9.

It is noted that soil characteristics including pH were not analysed, therefore EILS, including copper and zinc, requiring pH soil characteristic data were not calculated.

Where no criteria are present for a contaminant, the laboratory limit of reporting (LOR) has been used as an initial screening criteria.

6.2.2 Groundwater Investigation Criteria

The groundwater data will be compared against adopted site assessment criteria, namely:

- Criteria for the 95% protection in freshwater water ecosystems presented in ANZECC (2000).

The site assessment criteria are presented in Table B. Freshwater trigger values have been adopted given the environmental conditions around the site. It is noted that, drinking water uses of groundwater at the site are not considered likely based upon the available groundwater data and anticipated future use of the site. As such, drinking water criteria have not be adopted within the site assessment criteria.

[9] *Trace element concentrations in soils from rural and urban areas of Australia*, H Olszowy, P Torr, P Imray, Department of Human Services and Health, Environmental Protection Agency, published 1995 (Olszowy *et* al. 1995)

7. Quality Assurance/Quality Control

7.1 QA/QC Results

The QA/QC result for soil and water samples collected at the site are summarised in **Table 7.1** and discussed in **Section 7.2**. Detailed QA/QC results are included in the laboratory reports in **Appendix D**, and in the Esdat output included in **Appendix E.**

Table 7.1 - QA/QC Results Summary

Data Quality Indicator	Results	DQI met?
Precision		
Soil blind duplicates (intra laboratory)	0-35% RPD Intra laboratory samples were analysed at a rate greater than 1 in 20 samples.	Yes
Soil blind triplicates (inter laboratory)	0-36% RPD Intra laboratory samples were analysed at a rate greater than 1 in 20 samples.	Yes
Water blind duplicates (intra laboratory)	0-156% RPD Intra laboratory samples were analysed at a rate greater than 1 in 20 samples.	Partial[1]
Water blind triplicates (inter laboratory)	0-176% RPD Intra laboratory samples were analysed at a rate greater than 1 in 20 samples.	Partial[1]
Laboratory duplicates	Sampling rate greater than 1 in 20. RPDs = 0-<50%	Yes
Accuracy		
Surrogate spikes	1-29% Recovery Surrogate spikes were completed for all organic samples	Partial[1]
Laboratory Control Samples	31-131% Recovery Laboratory control samples were completed for all organic and metal analytes	Partial[1]
Matrix spikes	40-69% Recovery Matrix spikes were completed for all organic and metals samples	Partial[1]
Representativeness		
Sampling appropriate for media and analytes	All sampling conducted in accordance with JBS&G procedures	Yes
Laboratory blanks	Lead (filtered) water reported results equal to the LOR in report 546369	Partial[1]
Samples extracted and analysed within holding times.	All samples were generally extracted and analysed within holding times with the exception analysis on sample BH06_0.2-0.3 resubmitted for analysis.	Partial[1]
Trip spikes	83-102%	Yes
Trip blanks	<LOR	Yes
Rinsate blank	<LOR Rinsates collected with soil samples	Yes
Comparability		
Standard operating procedures used for sample collection & handling	Field staff used same standard operating procedures throughout works	Yes
Standard analytical methods used	Standard analytical methods used.	Yes
Consistent field conditions, sampling staff and laboratory analysis	Sampling was conducted by a single staff member using standard operating procedures in the same conditions throughout the works. The laboratories remained consistent throughout the investigation.	Yes
Limits of reporting appropriate and consistent	Limits of reporting were consistent and appropriate.	Partial[1]
Completeness		
Soil description & COCs completed	All logs and COCs were completed appropriately.	Yes
Appropriate documentation	All appropriate field documentation is included in the appendices.	Yes

Data Quality Indicator	Results	DQI met?
Satisfactory frequency/result for QC samples	The QC results are considered adequate for the purposes of the investigation.	Yes
Data from critical samples is considered valid	Data from critical samples is considered valid.	Yes

1. See discussion of DQI exceedances in Section 7.2.

7.2 QA/QC Discussion

7.2.1 Precision

Soil Blind Duplicates (intra laboratory)

Soil field blind (intra-laboratory) duplicates were collected at a rate of greater than 1 per 20 primary samples analysed, meeting the 1/20 DQI frequency. Blind (intra laboratory) duplicates for soil RPDs were all within the JBS&G acceptable limit (0-50%).

Soil Blind Triplicates (inter laboratory)

Soil field blind (inter-laboratory) triplicates were collected at a rate of greater than 1 per 20 primary samples analysed, meeting the 1/20 DQI frequency. Blind (inter laboratory) triplicates for soil RPDs were all within the JBS&G acceptable limit (0-50%).

Water Blind Duplicates (intra laboratory)

Water field blind (intra-laboratory) duplicates were collected at a rate greater than 1 per 20 primary samples analysed, meeting the 1/20 DQI frequency. Blind (intra laboratory) duplicates for water RPDs were all within the JBS&G acceptable limit (0-50%) except for the following:

- Lead (MW01-01/ QA1), with an RPD of 164%;
- Mercury (MW01-01/ QA1), with an RPD of 156%
- C15-C28 (MW01-01/ QA1), with an RPD of 67%;
- C29-C36 (MW01-01/ QA1), with an RPD of 67%;
- C10-C36 (MW01-01/ QA1), with an RPD of 120%; and
- >C16-C34 (MW01-01/ QA1), with an RPD of 133%.

The elevated RPDs reported for intra laboratory duplicates are considered to be acceptable with consideration to reported contaminant concentration and the reported LOR. As a conservative measure, the higher reported concentration in the primary and duplicate samples were considered when comparing against site assessment criteria.

Water Blind Triplicates (inter laboratory)

Water field blind (inter-laboratory) triplicates for water were collected at a rate of greater than 1 per 20 primary samples analysed, meeting the 1/20 DQI frequency. Blind (inter laboratory) triplicates for were RPDs were all within the JBS&G acceptable limit (0-50%), except for the following:

- Lead in MW01-01/QC1, with an RPD of 164%; and
- Mercury in MW01-01/QC1, with an RPD of 176%.

The elevated RPD results from the groundwater blind duplicates and triplicates are not considered to influence the outcome of the investigation given the low concentrations of COPCs detected, which were generally below or close to the site groundwater criteria.

Laboratory Duplicates

All laboratory duplicate results were within the JBS&G acceptable range (0-50%) for all; COPCs.

7.2.2 Accuracy

Surrogate spike recoveries were outside the acceptable range of 70-130%. However, most of these exceedances were still within the NATA acceptable limits of 50-150% and are therefore considered to be within an acceptable range.

Laboratory control sample (LCS) recoveries have been reported for analysis of all constituents for the analytical batches. Twenty-three analytes reported recoveries outside of the acceptable range (70-130%). However, this is not considered to affect the accuracy of the report as the results were generally within the NATA qualified laboratories limits.

Matrix spike recoveries were within the acceptable range of 70-130%, except for:

- Six individual compounds of phenols (2-Methylphenol (o-Cresol), 2-Nitrophenol, 2.4-Dichlorophenol, 3&4- Methylphenol(m&p Cresol), 4-Chloro-3-methylphenol and 2.6-Dichlorophenol) with reported matrix spikes ranging between 32% and 69%; and
- An individual compound of PAH (benzo(b&j)fluoranthene) with a matrix spike of 65%.

Five of the seven matrix spike recoveries exceedances were within the NATA accredited lab method acceptable range for matrix recoveries which is 60-140%. Given that reported results were below the LOR and almost all spike recoveries were below the acceptable range for the method, the exceptions to the JBS&G acceptable range are not considered to affect the overall reliability or accuracy of the data.

7.2.3 Representativeness

The extraction and analysis of critical soil samples was generally completed within the recommended holding times for all analytes. A number of VOC's were analysed beyond the holding times when sample BH06-0.2-0.3 was re-submit for analysis.

A rinsate sample was collected from the drill rig during soil sampling. All results were below the LOR, indicating no cross-contamination was evident between soil samples.

A trip spike was submitted with soil and groundwater samples collected during the assessment. Trip spike recovery was within the acceptable limits of 70-130%.

A storage blank was submitted with the soil samples collected during the assessment. There were no reported concentrations of BTEX compounds above the laboratory LOR.

Lead (filtered) within the method blank submitted with report 546369 reported a concentration of 0.001 mg/l equal to the laboratory LOR. All primary samples within report 546369 were resubmitted for analysis of heavy metals with the results reported in 548010. Reported concentrations of all analytes reported within lab report 548010 were <LOR in laboratory blank samples.

All field equipment was decontaminated, where required and calibrated appropriately as per the standard procedures**.**

7.2.4 Comparability

Samples were submitted to Eurofins|mgt, the primary laboratory, and Envirolab Services, the secondary. Both laboratories are NATA accredited for all analytical methods used.

Experienced JBS&G personnel undertook all sampling in accordance with standard JBS&G sampling methods.

Field staff were consistent during soil investigation, and similarly during groundwater sampling.

7.2.5 Completeness

All laboratory and field documentation is complete and correct. Chain of custody documentation is provided with laboratory reports in **Appendix D**.

The frequency of analysis of all QC samples was considered appropriate and valid.

7.2.6 Sensitivity

Laboratory analysis methods for all contaminants in soil adopted during the investigation used limits of reporting less than the site assessment criteria to ensure that contaminant concentrations could be confidently identified as being less than the adopted soil site assessment criteria.

Some groundwater analytes, including heavy metals, TRH, BTEX and naphthalene within laboratory report 546369 had LOR values above the adopted site criteria. These samples were resubmitted for analysis against the lower LOR with reported results provided in **Table A**.

7.3 QA/QC Conclusions

The field sampling and handling procedures produced QA/QC results which indicate that the soil and groundwater data are of an acceptable quality and suitable for use in site characterisation.

The NATA certified laboratory results sheets indicate that the project laboratory was generally achieving levels of performance within its recommended control limits during the period when the samples from this program were analysed.

The non-conformances described in **Section 7.2** are considered to be minor in nature and acceptable given the many results falling within the NATA accredited method acceptance range, and results are significantly below the adopted site assessment criteria.

On the basis of the results of the field and laboratory QA/QC program, the soil and groundwater data are of an acceptable quality upon which to draw conclusions regarding the environmental condition of the site.

8. Discussion of Soil Results

8.1 Soil Observations

Sample locations are shown on **Figure 2**, and the geology encountered at the site during the field works is summarised below. Borelogs are presented in **Appendix C**.

Fill material was encountered at all sampling locations ranging from 0.4 to 1.2 m bgs. In roadway areas, fill was generally found to consist road base, gravelly sand underlain by clayey silt or gravelly clay with trace levels of sand inclusions. In grassed / vegetated or garden bed areas the fill was generally found to consist sandy silt underlain by gravelly silty clay or gravelly sandy clay with organic matter inclusions. Fill was underlain by natural brown mottled red or grey mottled red clay or weathered siltstone.

No staining, odours were encountered during the investigation. No ACM was observed during the investigation. PID reads from sampled soils ranged between 0 and 6.4 ppm.

8.2 Soil Analytical Results

The soil sampling locations are shown on **Figure 2**. Detailed laboratory reports and chain of custody documentation are provided in **Appendix D**.

Review of results indicated that the LOR in sample BH06_0.2-0.3 for selected analytes (BTEX, naphthalene and TRH fractions C6-C9, C6-C10, F1) had been raised. This sample was resubmitted for analysis of the above-mentioned analytes. Results of the resubmitted analysis along with summarised soil laboratory results are presented in **Table A** and discussed in the following sections.

8.2.1 Metals

The concentrations of heavy metals in soil samples selected for analysis were all less than the LOR or the adopted health based criteria except for lead concentrations in sample BH10_0.0-0.1 (3,500 mg/kg) exceeding HIL B (1,200 mg/kg).

All heavy metal concentrations were reported at or below the LOR the adopted ecological criteria except for lead concentrations in BH10_0.0-0.1 (3,500 mg/kg) exceeding EIL (1,100 mg/kg).

8.2.2 TRH/BTEX

The concentrations of TRH and BTEX in the soil samples selected for analysis were all less than the site assessment criteria and generally below the LOR.

8.2.3 PAHs

PAH concentrations in samples selected for analysis were below the LOR and adopted site assessment criteria.

8.2.4 OCPs/PCBs

OCP and PCB concentrations were reported below the laboratory LOR in all samples selected for analysis and less than the adopted site assessment criteria.

8.2.5 Phenols

Phenol concentrations were reported below the laboratory LOR in all samples selected for analysis and less than the adopted site assessment criteria.

8.2.6 Asbestos

Asbestos in the form of ACM was not observed in the fill material during drilling or hand augering. No asbestos was detected in samples selected for analysis.

9. Discussion of Groundwater Results

9.1 Groundwater Observations

Monitoring well locations are shown on **Figure 2**, a summary of groundwater parameters is presented below, and groundwater analytical data with comparison to the adopted groundwater site assessment criteria is presented in **Table B**.

Tabulated values for the measured depth to groundwater and corresponding relative groundwater levels, are presented in **Table C**.

The depth to water measured in monitoring wells, prior to sampling (16th May 2017), ranged between 1.038 m below top of casing (m btoc) (MW01) and 7.720 m btoc (MW03).

Field notes provided for the groundwater investigation indicate that groundwater purged from the sampled wells was turbid and brown in colour. No odours or sheen was observed in the sampled waters.

The ranges of field measured parameters for the water samples were as follows:

- The pH ranged from 6.55 (MW01) to 6.92 (MW03);
- Electrical conductivity ranged from 5.28 mS/cm (MW01) to 9.82 mS/cm (MW03);
- Uncorrected redox potential ranged from -4 mV (MW03) to 369 mV (MW01); and
- Dissolved oxygen ranged from 2.41 ppm (MW02) to 172 ppm (MW01).

9.2 Groundwater Analytical Results

The groundwater monitoring well locations are shown on **Figure 2**. Detailed laboratory reports and chain of custody documentation are provided in **Appendix D**.

Review of results indicated that the LOR for heavy metals in samples MW01-01, MW02-01, MW03-01 and MW04-01 had been raised. These sample was resubmitted for analysis of heavy metals. Results of the resubmitted analysis along with summarised groundwater laboratory results are presented in **Table B** and discussed in the following sections.

9.2.1 Metals

The concentration of heavy metals within groundwater samples were below the site assessment criteria and generally below the LOR, except for:

- Copper concentrations in groundwater monitoring well sample MW02-01 (0.003 mg/L) exceeding the ANZECC 2000 95% protection of freshwater criteria of 0.0014 mg/L;
- Nickel concentrations in groundwater monitoring well sample MW03-01 (0.023 mg/L) exceeding the ANZECC 2000 95% protection of freshwater criteria of 0.011 mg/L; and
- Zinc concentrations in groundwater monitoring well samples MW01-01 (0.084 mg/L), MW02-01 (0.015 mg/L), MW03-01 (0.015 mg/L), MW04-01 (0.01 mg/L) exceeding the ANZECC 2000 95% protection of freshwater criteria of 0.008 mg/L.

9.2.2 TRH/BTEX

TRH was identified at low levels in MW01, MW03 and MW04, however, BTEX and naphthalene were below laboratory LORs and no concentrations exceeded the site assessment criteria. It is considered likely the TRH concentrations are associated either with monitoring well installation (by others) or naturally occurring.

9.2.3 PAHs

PAH concentrations in groundwater samples selected were below the LOR and adopted site assessment criteria.

9.2.4 Phenols

Phenol concentrations were reported below the laboratory LOR in all groundwater samples and less than the adopted site assessment criteria.

10. Site Characterisation

Based on the decision-making process for assessing urban redevelopment sites detailed in DEC (2006) and discussed in **Section 5.1.5**, the decisions required to be made are discussed below.

10.1 Potential Risks to Future Onsite Receptors

Representative samples of fill material were analysed for a range of identified potential contaminants of concern including heavy metals, TRH/BTEX, PAH, OCPs, PCBs and asbestos.

The concentration of lead within soil sample BH10_0.0-0.1 represents a potentially unacceptable risk to human and ecological receptors at the site. BH10 was located in the fill embankment along the western boundary of the site. The elevated concentrations of lead at the near surface could be related to the presence of fill within this area.

All other samples indicated contaminants were below the laboratory LOR or the adopted site criteria.

Groundwater analytical data indicates that copper, nickel and zinc concentrations exceed groundwater investigation levels for 95% protection in fresh water ecosystems. However, there is no beneficial use of groundwater on the site or in the surrounding area. Therefore, it is considered that these impacts do not cause a potential risk to onsite receptors and likely reflect background conditions.

10.2 Background Soil Concentrations

Soil samples collected within fill were submitted for analysis as part of the limited analytical programme. Except for BH10, concentrations of analytes were detected at relatively low levels and background soil concentrations in natural soils (clay and shale) are expected to be low.

10.3 Chemical Mixtures

There were no potential chemical mixtures identified during the investigation that may pose an unacceptable contamination risk at the site with respect to future site users.

10.4 Aesthetic Issues including Odours

No significant odours or staining was identified during the investigation. No ACM was observed.

10.5 Potential Migration of Contaminants

The potential for migrations of contaminants from the site is considered to be generally low based upon the general absence of significant surface soil contamination, and surface coverage of the site in hardstand or predominantly vegetated ground.

The vertical extent of the lead exceedance in BH10 is unknown as the borehole was unable to progressed to depth during the field work programme. The lateral extent of the lead exceedance has not been identified given the location of BH10 relative to the western boundary and the limited intrusive investigation onsite.

Potential for contaminant migration is low due to the low concentration of analytes present in groundwater. The depth to groundwater was significantly deeper than where soil contaminants were identified on the site. Furthermore, the soils at the site are considered to have a relatively low permeability due to the presence of firm clay soils. As such, soil contaminants from site related activities are unlikely to migrate into groundwater.

10.6 Site Management Strategy

Based on the scope of works completed, including a desktop review and limited intrusive investigations, and the limitations presented in **Section 12**, the current investigation did not identify widespread contamination in the soil or groundwater.

11. Conclusions and Recommendations

Based on the scope of work and subject to the limitations in **Section 12**, the following summarises the findings and conclusions of the assessment:

- The site remained vacant until the construction of the present day building circa 1986. The surrounding land use has been predominantly residential in nature, except for the quarry situated immediately west of the site. The quarry is visible in the 1930 aerial image and appears to have been filled in the 1980's;
- During the investigation, fill material was encountered at all sampling locations ranging from 0.4 to 1.2 m bgs. Fill material generally comprised road base, gravelly sand underlain by clayey silt or gravelly clay with trace levels of sand inclusions in road way areas. In grassed / vegetated or garden bed areas the fill was generally found to consist sandy silt underlain by gravelly silty clay or gravelly sandy clay with organic matter inclusions;
- A limited number of samples representative of fill material were analysed for a range of identified potential contaminants of concern including heavy metals, TRH/BTEX, PAH, OCPs, PCBs and asbestos;
- Four existing groundwater wells were sampled for a range of contaminants of potential concern (COPC) including heavy metals, TRH/BTEX, PAH and phenols;
- All other COPCs were below the laboratory LOR or the adopted human health based site assessment criteria and therefore do not pose a potentially unacceptable risk to future on-site receptors, except for:
    - Concentrations of lead exceeded the adopted health and ecological site soil assessment criteria at one shallow soil sampling location (BH10). The lateral and vertical extent of the lead exceedance has not been identified and remains a data-gap; and
    - Groundwater investigations identified copper, nickel and zinc above site criteria for fresh water ecosystems, however, it is considered the concentrations are representative of regional groundwater and not related to contamination of the site. There is no known beneficial use of groundwater on the site or in the surrounding area.

Based on the findings of the investigation, it is recommended that prior to site redevelopment the fill materials present on site be fully characterised to support appropriate management during construction. During further site investigations, the low potential for landfill gas migrating onto the site should be assessed by appropriate sampling.

12. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

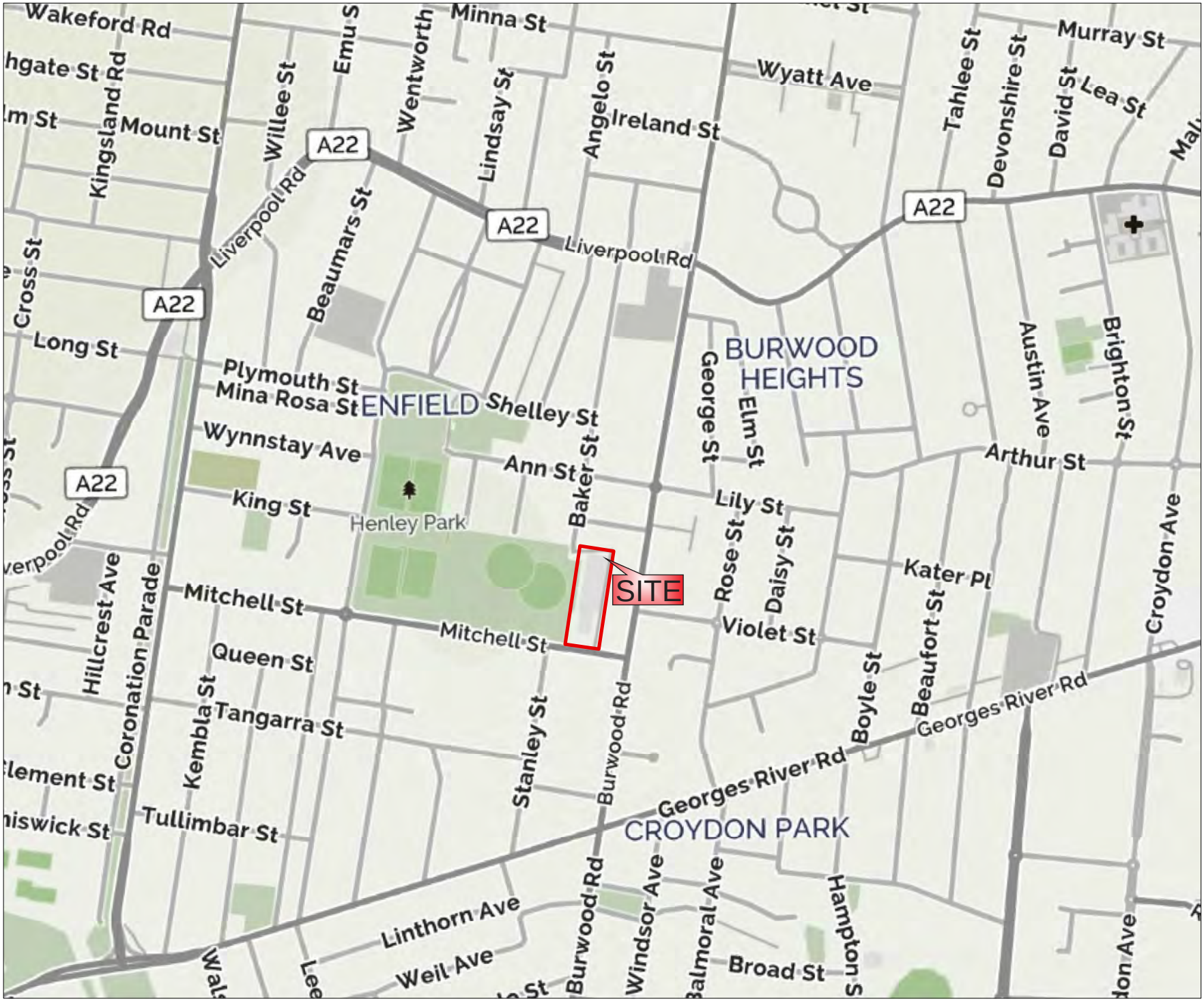
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Legend:

Approximate Site Boundary

JBS&G

Job No: 52979

Client: Tian An Enfield Pty Ltd

Version: R01 Rev A	Date: 02-Jun-2017
Drawn By: BC	Checked By: NW

Scale 1:10,000

0 120 240

metres

Coor. Sys. GDA 1994 MGA Zone 56

4 Mitchell Street
Enfield, NSW

SITE LOCATION

FIGURE 1

File Name: 52680_01
Reference: Map Quest - https://www.mapquest.com/ - accessed 02/06/2017.

Legend:

- Approximate Site Boundary
- Borehole Sample Location
- Monitoring Well Sample Location

JBS&G

Job No: 52979

Client: Tian An Enfield Pty Ltd

Version: R01 Rev A	Date: 05-Jun-2017
Drawn By: BC	Checked By: NW

Scale 1:1,500

0 10 20
metres

Coor. Sys. GDA 1994 MGA Zone 56

4 Mitchell Street
Enfield, NSW

SITE LAYOUT & SAMPLE LOCATIONS

FIGURE 2

File Name: 52680_02
Reference: Near Maps - http://www.nearmap.com.au/. Imagery 06-05-2017.

Tables

INSERT TABLE NAME
Project Number: 52680
Project Name: 4 Mitchell Street Enfield ESA

Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Matrix_Description	Lab_Report_Number
BH02_0.4-0.5	BH02	0.4-0.5	28-Apr-17		544088
BH04_0.4-0.5	BH04	0.4-0.5	28-Apr-17		544088
QA120170428	BH04	0.4-0.5	28-Apr-17		544088
QC1	BH04	0.4-0.5	28-Apr-17		166044
BH06_0.2-0.3	BH06	0.2-0.3	28-Apr-17		544088/548234 (TRH)
BH07_0.2-0.3	BH07	0.2-0.3	28-Apr-17		544088
BH08_0.2-0.3	BH08	0.2-0.3	28-Apr-17		544088
BH09_0.4-0.5	BH09	0.4-0.5	28-Apr-17		544088
BH10_0.0-0.1	BH10	0-0.1	28-Apr-17		544088

	Metals & Metalloids								TPHs (NEPC 1999)				
	Arsenic (Total)	Cadmium	Chromium (Total)	Copper	Lead	Mercury (Inorganic)	Nickel	Zinc	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	2.00	0.40	1.00	1.00	1.00	0.10	1.00	1.00	20.00	20.00	50.00	50.00	50.00
NEPC 2013 EIL, EILs Aged Sediment	100				1100		220						
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil													
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine													
NEPM 2013 Soil HIL B	500	150	500	30000	1200	120	1200	60000					
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m													
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m													
NEPM 2013 Soil HSL B - Sensitive Setting													
BH02_0.4-0.5	3.5	<0.4	12	25	17	<0.1	19	54	<20	<20	<50	<50	<50
BH04_0.4-0.5	5.7	<0.4	19	28	13	<0.1	36	39	<20	<20	<50	<50	<50
QA120170428	4	<0.4	16	30	12	<0.1	31	35	<20	<20	<50	<50	<50
QC1	6	<0.4	21	24	12	<0.1	25	32	<25	<50	<100	<100	-
BH06_0.2-0.3	5.9	<0.4	22	11	30	<0.1	17	33	<20	<20	<50	<50	<50
BH07_0.2-0.3	16	<0.4	16	12	49	<0.1	5.1	68	<20	<20	<50	60	60
BH08_0.2-0.3	3	<0.4	11	11	17	<0.1	6.9	28	<20	<20	<50	<50	<50
BH09_0.4-0.5	<2	<0.4	34	46	<5	<0.1	160	59	<20	<20	54	94	148
BH10_0.0-0.1	5.7	<0.4	8.5	17	3500	<0.1	6.8	44	<20	<20	<50	170	170
Statistical Summary													
Number of Results	9	9	9	9	9	9	9	9	9	9	9	9	8
Number of Detects	8	0	9	9	8	0	9	9	0	0	1	3	3
Minimum Concentration	<2	<0.4	8.5	11	<5	<0.1	5.1	28	<20	<20	<50	<50	<50
Minimum Detect	3	ND	8.5	11	12	ND	5.1	28	ND	ND	54	60	60
Maximum Concentration	16	<0.4	34	46	3500	<0.1	160	68	<25	<50	<100	170	170
Maximum Detect	16	ND	34	46	3500	ND	160	68	ND	ND	54	170	170
Average Concentration	5.6	0.2	18	23	406	0.05	34	44	10	12	31	55	63
Median Concentration	5.7	0.2	16	24	17	0.05	19	39	10	10	25	25	25
Standard Deviation	4.2	0	7.6	11	1160	0	48	14	0.83	5	12	49	61
Number of Guideline Exceedances	0	0	0	0	1	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	1	0	0	0	0	0	0	0	0

	TRHs (NEPC 2013)							BTEX					
	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C40 Fraction (Total)	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	50.00	100.00	100.00		50.00	20.00	20.00	0.10	0.10	0.10	0.10	0.20	0.30
NEPC 2013 EIL, EILs Aged Sediment													
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil	120	1300	5600		120	180	180	65	125	105			45
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine	1000	3500	10000			800							
NEPM 2013 Soil HIL B													
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m					280		50	0.7	NL	480			110
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m					NL		90	1	NL	NL			310
NEPM 2013 Soil HSL B - Sensitive Setting					110		45	0.5	55	160			40
BH02_0.4-0.5	<50	<100	<100	-	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH04_0.4-0.5	<50	<100	<100	-	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QA120170428	<50	<100	<100	-	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
QC1	<50	<100	<100	<50	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<1
BH06_0.2-0.3	<50	<100	<100	-	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH07_0.2-0.3	<50	<100	<100	-	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH08_0.2-0.3	<50	<100	<100	-	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH09_0.4-0.5	<50	120	<100	-	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
BH10_0.0-0.1	<50	100	100	-	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
Statistical Summary													
Number of Results	9	9	9	1	9	9	9	9	9	9	9	9	9
Number of Detects	0	2	1	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<50	<100	<100	<50	<50	<20	<20	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3
Minimum Detect	ND	100	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<50	120	100	<50	<50	<25	<25	<0.2	<1	<0.5	<1	<2	<1
Maximum Detect	ND	120	100	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	25	63	56		25	10	10	0.056	0.1	0.072	0.1	0.2	0.19
Median Concentration	25	50	50	25	25	10	10	0.05	0.05	0.05	0.05	0.1	0.15
Standard Deviation	0	27	17		0	0.83	0.83	0.017	0.15	0.067	0.15	0.3	0.12
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0

	Polycyclic Aromatic Hydrocarbons																				
	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound)*	Benzo(a)pyrene TEQ (medium bound)*	Benzo(a)pyrene TEQ (upper bound)*	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Carcinogenic PAHs as B(a)P TEQ	Phenanthrene	Pyrene	PAHs (Total)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50		0.50	0.50	0.50
NEPC 2013 EIL, EILs Aged Sediment																	170				
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil					0.7																
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine																					
NEPM 2013 Soil HIL B																		4			400
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																	5				
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																	NL				
NEPM 2013 Soil HSL B - Sensitive Setting																	3				
BH02_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-
BH04_0.4-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5
QA120170428	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-
QC1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<1	-	-	-	-
BH06_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-
BH07_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-
BH08_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-
BH09_0.4-0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5
BH10_0.0-0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1.21	<0.5	<0.5	<0.5
Statistical Summary																					
Number of Results	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	9	3	3	3	3
Number of Detects	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<1.21	<0.5	<0.5	<0.5
Minimum Detect	ND	ND	ND	ND	ND	ND	0.6	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1.21	<0.5	<0.5	<0.5
Maximum Detect	ND	ND	ND	ND	ND	ND	0.6	1.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.25	0.25	0.25	0.25	0.25	0.25	0.6	1.2	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.61	0.25	0.25	0.25
Median Concentration	0.25	0.25	0.25	0.25	0.25	0.25	0.6	1.2	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.605	0.25	0.25	0.25
Standard Deviation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.12	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INSERT TABLE NAME
Project Number: 52680
Project Name: 4 Mitchell Street Enfield ESA

		Chlorinated Benzenes	Polychlorinated Biphenyls								Phenols																Organochlorine Pesticides																					
		Hexachlorobenzene	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Total)	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,6-dichlorophenol	2-chlorophenol	2-Methylphenol	2-nitrophenol	3- & 4-Methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Chloro-3-Methylphenol	4-nitrophenol	Phenol	Total Halogenated Phenol	Total Non-Halogenated Phenol	Total Tetrachlorophenols	4,4-DDE	Aldrin	Aldrin + Dieldrin (Sum of Total)	alpha-BHC	beta-BHC	Dieldrin	DDD	DDT	DDT+DDE+DDD (Sum of Total)	Chlordane	delta-BHC	Endosulfan alpha	Endosulfan beta	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Pentachlorophenol	Toxaphene
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		0.05	0.50	0.10	0.50	0.50	0.50	0.50	0.50	0.50	1.00	1.00	0.50	0.50	5.00	0.50	0.50	0.20	1.00	0.40	5.00	20.00	1.00	5.00	0.50	1.00	20.00	1.00	0.05	0.05		0.05	0.05	0.05	0.05	0.05		0.10	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.20	1.00	1.00
NEPC 2013 EIL, EILs Aged Sediment																																			180														
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																																																
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine																																																
NEPM 2013 Soil HIL B		15								1															45000						10						600	90					20			10			500	130	30
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																																																
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																																																
NEPM 2013 Soil HSL B - Sensitive Setting																																																
Field_ID	**LocCode**	**Sample_Depth_Range**	**Sampled_Date-Time**	**Matrix_Description**	**Lab_Report_Number**																																												
BH02_0.4-0.5	BH02	0.4-0.5	28-Apr-17		544088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.4-0.5	BH04	0.4-0.5	28-Apr-17		544088	<0.05	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	<1	<20	<1	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.15	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1
QA120170428	BH04	0.4-0.5	28-Apr-17		544088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC1	BH04	0.4-0.5	28-Apr-17		166044	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.2-0.3	BH06	0.2-0.3	28-Apr-17		544088/548234 (TRH)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07_0.2-0.3	BH07	0.2-0.3	28-Apr-17		544088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08_0.2-0.3	BH08	0.2-0.3	28-Apr-17		544088	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09_0.4-0.5	BH09	0.4-0.5	28-Apr-17		544088	<0.05	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	<1	<20	<1	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.15	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1
BH10_0.0-0.1	BH10	0.0-0.1	28-Apr-17		544088	<0.05	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	<1	<20	<1	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.15	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1
Statistical Summary																																																
Number of Results		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Number of Detects		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration		<0.05	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	<1	<20	<1	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.15	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1
Minimum Detect		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration		<0.05	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<1	<0.5	<0.5	<5	<0.5	<0.5	<0.2	<1	<0.4	<5	<20	<1	<5	<0.5	<1	<20	<1	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.15	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<1	<1
Maximum Detect		ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration		0.025	0.25	0.05	0.25	0.25	0.25	0.25	0.25	0.25	0.5	0.5	0.25	0.25	2.5	0.25	0.25	0.1	0.5	0.2	2.5	10	0.5	2.5	0.25	0.5	10	0.5	0.025	0.025	0.05	0.025	0.025	0.025	0.025	0.025	0.075	0.05	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.5	0.5
Median Concentration		0.025	0.25	0.05	0.25	0.25	0.25	0.25	0.25	0.25	0.5	0.5	0.25	0.25	2.5	0.25	0.25	0.1	0.5	0.2	2.5	10	0.5	2.5	0.25	0.5	10	0.5	0.025	0.025	0.05	0.025	0.025	0.025	0.025	0.025	0.075	0.05	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.1	0.5	0.5
Standard Deviation		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

INSERT TABLE NAME
Project Number: 52680
Project Name: 4 Mitchell Street Enfield ESA

Field_ID	LocCode	Sample_Depth_Range	Sampled_Date-Time	Matrix_Description	Lab_Report_Number
BH02_0.4-0.5	BH02	0.4-0.5	28-Apr-17		544088
BH04_0.4-0.5	BH04	0.4-0.5	28-Apr-17		544088
QA120170428	BH04	0.4-0.5	28-Apr-17		544088
QC1	BH04	0.4-0.5	28-Apr-17		166044
BH06_0.2-0.3	BH06	0.2-0.3	28-Apr-17		544088/548234 (TRH)
BH07_0.2-0.3	BH07	0.2-0.3	28-Apr-17		544088
BH08_0.2-0.3	BH08	0.2-0.3	28-Apr-17		544088
BH09_0.4-0.5	BH09	0.4-0.5	28-Apr-17		544088
BH10_0.0-0.1	BH10	0-0.1	28-Apr-17		544088

	Organophosphorus Pesticides																
	Azinphos methyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.20	0.20	0.20	0.20	2.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20
NEPC 2013 EIL, EILs Aged Sediment																	
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																	
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine																	
NEPM 2013 Soil HIL B			340														
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																	
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																	
NEPM 2013 Soil HSL B - Sensitive Setting																	
BH02_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.4-0.5	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
QA120170428	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09_0.4-0.5	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
BH10_0.0-0.1	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2

	Organophosphorus Pesticides																Herbicides & Fungicides
	Malathion	Merphos	Mevinphos	Monocrotophos	Omethoate	Parathion	Parathion methyl	Phorate	Pirimiphos methyl	Pyrazophos	Ronnel	Sulprofos	Terbufos	Tetrachlorvinphos	Tokuthion	Trichloronate	Dinoseb
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0.20	0.20	0.20	2.00	2.00	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	20.00
NEPC 2013 EIL, EILs Aged Sediment																	
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil																	
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine																	
NEPM 2013 Soil HIL B																	
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m																	
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m																	
NEPM 2013 Soil HSL B - Sensitive Setting																	
BH02_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH04_0.4-0.5	<0.2	<0.2	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20
QA120170428	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH06_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH07_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH08_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH09_0.4-0.5	<0.2	<0.2	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20
BH10_0.0-0.1	<0.2	<0.2	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20

	Ionic Balance		Asbestos										Other		
	Cation Exchange Capacity	EC 1:5 soil:water	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	% Clay	% Moisture 103oC	Moisture
	meq/100g	µS/cm	g	%w/w	%w/w	g	g	g	g	g	g	g	%	%	%
EQL	0.05	10.00											1.00	1.00	
NEPC 2013 EIL, EILs Aged Sediment															
NEPM 2013 ESL Urban Residential and Public Open Space, Fine Soil															
NEPM 2013 Mgnt Limits - Residential, Parkland and Public Open Space, Fine															
NEPM 2013 Soil HIL B															
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 0 to <1m															
NEPM 2013 Soil HSL A & HSL B for Vapour Intrusion - Clay 1 to <2m															
NEPM 2013 Soil HSL B - Sensitive Setting															
BH02_0.4-0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	6.7	-
BH04_0.4-0.5	-	-	568	0	0	0	0	0	0	0	0	0	-	18	-
QA120170428	-	-	-	-	-	-	-	-	-	-	-	-	-	15	-
QC1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
BH06_0.2-0.3	15	90	-	-	-	-	-	-	-	-	-	-	8.8	13	-
BH07_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	18	-
BH08_0.2-0.3	-	-	-	-	-	-	-	-	-	-	-	-	-	7.9	-
BH09_0.4-0.5	-	-	1029	0	0	0	0	0	0	0	0	0	-	5.7	-
BH10_0.0-0.1	-	-	733	0	0	0	0	0	0	0	0	0	-	9.4	-

Statistical Summary

	Azinphos methyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion
Number of Results	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.2	<0.2	<0.2	<0.2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.1	0.1	0.1	0.1	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
Median Concentration	0.1	0.1	0.1	0.1	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
Standard Deviation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Malathion	Merphos	Mevinphos	Monocrotophos	Omethoate	Parathion	Parathion methyl	Phorate	Pirimiphos methyl	Pyrazophos	Ronnel	Sulprofos	Terbufos	Tetrachlorvinphos	Tokuthion	Trichloronate	Dinoseb
Number of Results	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.2	<0.2	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.2	<0.2	<0.2	<2	<2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<20
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.1	0.1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	10
Median Concentration	0.1	0.1	0.1	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	10
Standard Deviation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	Cation Exchange Capacity	EC 1:5 soil:water	Approx. Sample Mass	Asbestos from ACM in Soil	Asbestos from FA & AF in Soil	Mass ACM	Mass Asbestos in ACM	Mass FA	Mass Asbestos in FA	Mass AF	Mass Asbestos in AF	Mass Asbestos in FA & AF	% Clay	% Moisture 103oC	Moisture
Number of Results	1	1	3	3	3	3	3	3	3	3	3	3	1	8	1
Number of Detects	1	1	3	3	3	3	3	3	3	3	3	3	1	8	1
Minimum Concentration	15	90	568	0	0	0	0	0	0	0	0	0	8.8	5.7	16
Minimum Detect	15	90	568	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.8	5.7	16
Maximum Concentration	15	90	1029	0	0	0	0	0	0	0	0	0	8.8	18	16
Maximum Detect	15	90	1029	ND	ND	ND	ND	ND	ND	ND	ND	ND	8.8	18	16
Average Concentration			777	0	0	0	0	0	0	0	0	0		12	
Median Concentration	15	90	733	0	0	0	0	0	0	0	0	0	8.8	11.2	16
Standard Deviation			234	0	0	0	0	0	0	0	0	0		5	
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table B: Water Analytical Results
Project Number: 52680
Project Name: 4 Mitchell Street Enfield PSI

		PAHs in Water	Metals & Metalloids								TPHs (NEPC 1999)					TRHs (NEPC 2013)					
		Benzo(b,j+k)fluoranthene	Arsenic (Total) (Filtered)	Cadmium (Filtered)	Chromium (Total) (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Inorganic) (Filtered)	Nickel (Filtered)	Zinc (Filtered)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)
		µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL		2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.10	0.10	0.10	0.05	0.10	0.10	0.05	0.01	0.01
ANZECC 2000 Fresh Water 95%				0.0002	0.001	0.0014	0.0034	0.0006	0.011	0.008											
Field_ID	**LocCode**	**WellCode**	**Sampled_Date-Time**	**Lab_Report_Number**																	
MW01-01	MW01-01	MW01-01	16-May-17	546369 / 548010 Metals	-	0.001	<0.0002	<0.001	<0.001	0.003	<0.0001	0.006	0.084	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02
MW02-01	MW02-01	MW02-01	16-May-17	546369 / 548010 Metals	-	0.008	<0.0002	<0.001	0.003	<0.001	<0.0001	0.011	0.015	<0.02	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.02	<0.02
MW03-01	MW03-01	MW03-01	16-May-17	546369 / 548010 Metals	-	0.019	<0.0002	<0.001	0.001	<0.001	<0.0001	0.023	0.015	0.05	<0.05	0.9	1.1	2	<0.05	2.3	0.1	<0.05	0.05	0.05
MW04-01	MW04-01	MW04-01	16-May-17	546369 / 548010 Metals	-	<0.001	<0.0002	<0.001	0.001	<0.001	<0.0001	0.002	0.01	<0.02	<0.05	0.5	0.5	1	<0.05	1.1	<0.1	<0.05	<0.02	<0.02
QA1	MW01-01	MW01-01	16-May-17	546369	-	0.002	<0.0002	<0.001	<0.001	<0.001	<0.0001	0.007	<0.005	<0.02	<0.05	0.2	0.2	0.4	<0.05	0.5	<0.1	<0.05	<0.02	<0.02
QC1	MW01-01	MW01-01	16-May-17	167217	<2	0.005	<0.0001	<0.001	<0.001	<0.001	<0.00005	0.005	0.002	<0.01	<0.05	<0.1	<0.1	-	<0.05	<0.1	<0.1	<0.05	<0.01	<0.01
Statistical Summary																					
Number of Results		1	6	6	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6	6
Number of Detects		0	5	0	0	3	1	0	6	5	1	0	3	3	3	0	3	1	0	1	1
Minimum Concentration		<2	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.00005	0.002	0.002	<0.01	<0.05	<0.1	<0.1	<0.1	<0.05	<0.1	<0.1	<0.05	<0.01	<0.01
Minimum Detect		ND	0.001	ND	ND	0.001	0.003	ND	0.002	0.002	0.05	ND	0.2	0.2	0.4	ND	0.5	0.1	ND	0.05	0.05
Maximum Concentration		<2	0.019	<0.0002	<0.001	0.003	0.003	<0.0001	0.023	0.084	0.05	<0.05	0.9	1.1	2	<0.05	2.3	0.1	<0.05	0.05	0.05
Maximum Detect		ND	0.019	ND	ND	0.003	0.003	ND	0.023	0.084	0.05	ND	0.9	1.1	2	ND	2.3	0.1	ND	0.05	0.05
Average Concentration			0.0059	0.000092	0.0005	0.0011	0.00092	0.000046	0.009	0.021	0.016	0.025	0.29	0.33	0.7	0.025	0.68	0.058	0.025	0.016	0.016
Median Concentration		1	0.0035	0.0001	0.0005	0.00075	0.0005	0.00005	0.0065	0.0125	0.01	0.025	0.125	0.125	0.4	0.025	0.275	0.05	0.025	0.01	0.01
Standard Deviation			0.007	0.00002	0	0.00097	0.001	0.00001	0.0075	0.031	0.017	0	0.35	0.42	0.82	0	0.9	0.02	0	0.017	0.017
Number of Guideline Exceedances		0	0	0	0	1	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)		0	0	0	0	1	0	0	2	4	0	0	0	0	0	0	0	0	0	0	0

Table B: Water Analytical Results
Project Number: 52680
Project Name: 4 Mitchell Street Enfield ESA

					BTEX						Polycyclic Aromatic Hydrocarbons																	
					Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (WHO)	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	Total Positive PAHs
					mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL					0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	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
ANZECC 2000 Fresh Water 95%					0.95	0.08	0.18	0.35		0.625															0.016				
Field_ID	**LocCode**	**WellCode**	**Sampled_Date-Time**	**Lab_Report_Number**																									
MW01-01	MW01-01	MW01-01	16-May-17	546369 / 548010 Metals	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
MW02-01	MW02-01	MW02-01	16-May-17	546369 / 548010 Metals	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
MW03-01	MW03-01	MW03-01	16-May-17	546369 / 548010 Metals	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
MW04-01	MW04-01	MW04-01	16-May-17	546369 / 548010 Metals	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
QA1	MW01-01	MW01-01	16-May-17	546369	<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-
QC1	QC1	QC1	16-May-17	167217	<0.001	<0.001	<0.001	<0.001	<0.002	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	-	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	0
Statistical Summary																													
Number of Results					6	6	6	6	6	5	6	6	6	6	6	1	5	6	5	6	6	6	6	6	6	6	6	5	1
Number of Detects					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Minimum Concentration					<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0
Minimum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration					<0.001	<0.001	<0.001	<0.001	<0.002	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0
Maximum Detect					ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration					0.0005	0.0005	0.0005	0.0005	0.001	0.0015	0.0005	0.0005	0.0005	0.0005	0.0005		0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	
Median Concentration					0.0005	0.0005	0.0005	0.0005	0.001	0.0015	0.0005	0.0005	0.0005	0.0005	0.0005	0.0025	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0.0005	0
Standard Deviation					0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	
Number of Guideline Exceedances					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table B: Water Analytical Results
Project Number: 52680
Project Name: 4 Mitchell Street Enfield ESA

	Phenols																			Organochlorine Pesticides	Herbicides & Fungicides
	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,6-dichlorophenol	2-chlorophenol	2-Methylphenol	2-nitrophenol	3- &4-Methylphenol	4,6-Dinitro-2-methylphenol	4,6-Dinitro-o-cyclohexyl phenol	4-Chloro-3-Methylphenol	4-nitrophenol	Phenol	Phenols (Total)	Total Halogenated Phenol	Total Non-Halogenated Phenol	Total Tetrachlorophenols	Pentachlorophenol	Dinoseb
	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
EQL	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01	0.10	0.01	0.00	0.00	0.05	0.01	0.10	0.03	0.01	0.10
ANZECC 2000 Fresh Water 95%		0.02	0.16		0.045		0.49								0.32					0.01	
Field_ID **LocCode** **WellCode** **Sampled_Date-Time** **Lab_Report_Number**																					
MW01-01 MW01-01 MW01-01 16-May-17 546369 / 548010 Metals	<0.001	<0.01	<0.001	<0.001	<0.001	<0.003	<0.003	<0.003	<0.005	<0.006	<0.005	<0.1	<0.01	<0.001	<0.003	-	<0.01	<0.1	<0.03	<0.01	<0.1
MW02-01 MW02-01 MW02-01 16-May-17 546369 / 548010 Metals	<0.001	<0.01	<0.001	<0.001	<0.001	<0.003	<0.003	<0.003	<0.005	<0.006	<0.005	<0.1	<0.01	<0.001	<0.003	-	<0.01	<0.1	<0.03	<0.01	<0.1
MW03-01 MW03-01 MW03-01 16-May-17 546369 / 548010 Metals	<0.001	<0.01	<0.001	<0.001	<0.001	<0.003	<0.003	<0.003	<0.005	<0.006	<0.005	<0.1	<0.01	<0.001	<0.003	-	<0.01	<0.1	<0.03	<0.01	<0.1
MW04-01 MW04-01 MW04-01 16-May-17 546369 / 548010 Metals	<0.001	<0.01	<0.001	<0.001	<0.001	<0.003	<0.003	<0.003	<0.005	<0.006	<0.005	<0.1	<0.01	<0.001	<0.003	-	<0.01	<0.1	<0.03	<0.01	<0.1
QA1 MW01-01 MW01-01 16-May-17 546369	<0.001	<0.01	<0.001	<0.001	<0.001	<0.003	<0.003	<0.003	<0.005	<0.006	<0.005	<0.1	<0.01	<0.001	<0.003	-	<0.01	<0.1	<0.03	<0.01	<0.1
QC1 QC1 QC1 16-May-17 167217	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-
Statistical Summary																					
Number of Results	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	1	5	5	5	5	5
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.001	<0.01	<0.001	<0.001	<0.001	<0.003	<0.003	<0.003	<0.005	<0.006	<0.005	<0.1	<0.01	<0.001	<0.003	<0.05	<0.01	<0.1	<0.03	<0.01	<0.1
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.001	<0.01	<0.001	<0.001	<0.001	<0.003	<0.003	<0.003	<0.005	<0.006	<0.005	<0.1	<0.01	<0.001	<0.003	<0.05	<0.01	<0.1	<0.03	<0.01	<0.1
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.0005	0.005	0.0005	0.0005	0.0005	0.0015	0.0015	0.0015	0.0025	0.003	0.0025	0.05	0.005	0.0005	0.0015		0.005	0.05	0.015	0.005	0.05
Median Concentration	0.0005	0.005	0.0005	0.0005	0.0005	0.0015	0.0015	0.0015	0.0025	0.003	0.0025	0.05	0.005	0.0005	0.0015	0.025	0.005	0.05	0.015	0.005	0.05
Standard Deviation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table C - Groundwater Parameters Results
Job No: 52680
Mitchell Street, Enfield PSI

Well ID	Date Measured	Depth to Water	Dissolved Oxygen	Electrical Conductivity	Redox Potential	pH	Temperature	Comments
		m bgs	(ppm)	(mS/cm)	(mV)		(°C)	
Groundwater Monitoring								
MW01	16-05-17	1.038	1.72	5	369	6.55	22.1	Brown, turbid, no odour, no sheen
MW02	16-05-17	5.545	2.41	8	145	6.89	18.8	Brown, turbid, no odour, no sheen
MW03	16-05-17	7.720	2.72	10	-4	6.92	19.1	Brown, turbid, no odour, no sheen
MW04	16-05-17	4.059	3.10	8	149	6.86	19.0	Brown, turbid, no odour, no sheen

Appendix A: Office of Water Bore Search

Department of Primary Industries
Office of Water

Home | About us | Water Management | Water Licensing | Urban Water | Real-time data

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home · help · login · contact · customise

All Groundwater
find a site
All Groundwater Map

bandwidth ◉ high ○ low

glossary and metadata

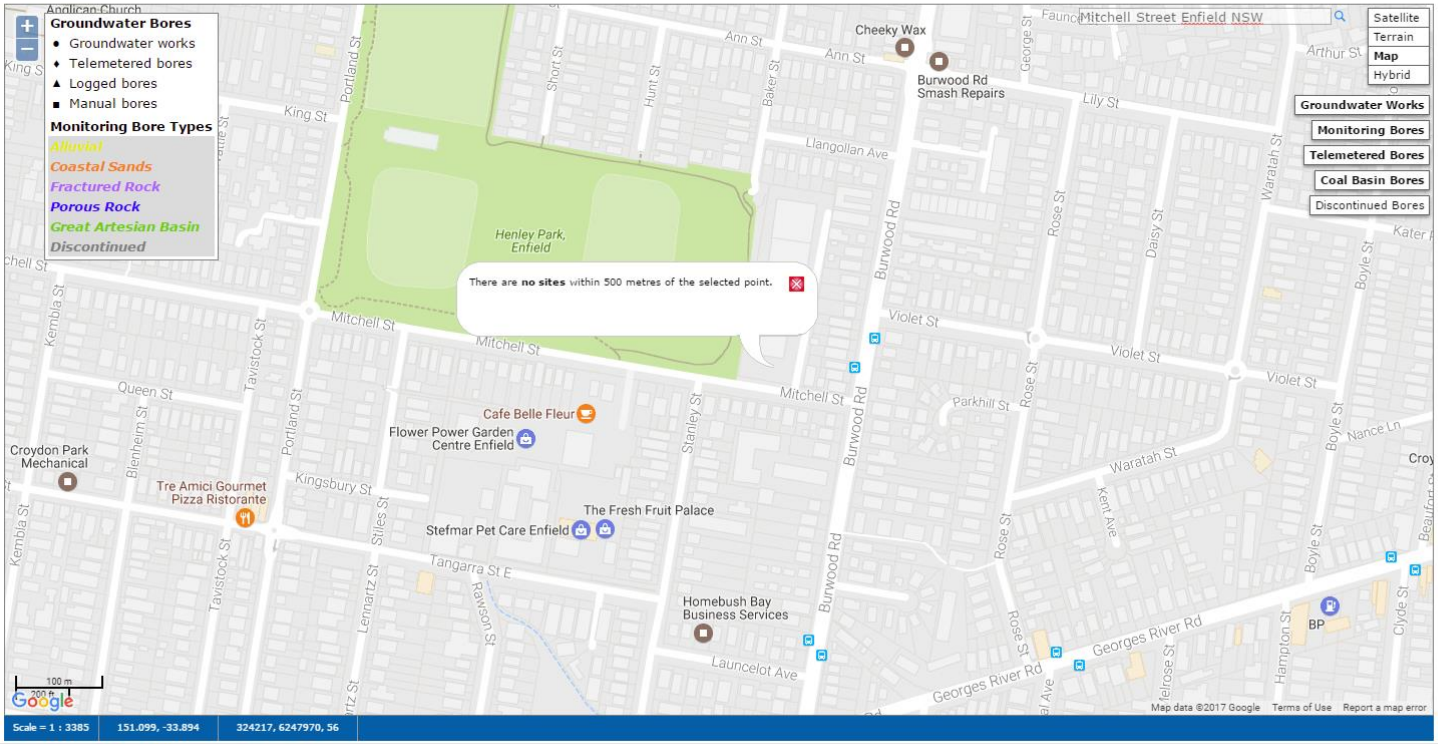
All Groundwater

All Groundwater Map

bookmark this page

All data times are Eastern Standard Time

Map | Info



10:39 AM
05-Jun-17

Appendix B: EPA Records

Contaminated land

+ Management of contaminated land
+ Consultants and site auditor scheme
+ Underground petroleum storage systems
Guidelines under the CLM Act
NEPM amendment
+ Further guidance
– Record of notices
About the record
Search the record
Search tips
Disclaimer
List of NSW contaminated sites notified to EPA
Frequently asked questions
Forms
+ Other contamination issues
+ Contaminated Land Management Program

Home Contaminated land Record of notices

Search results

Your search for: Suburb: ENFIELD

Search Again Refine Search

did not find any records in our database.

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... more search tips

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

More information about particular sites may be available from:

- The POEO public register
- The appropriate planning authority: for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act.

See What's in the record and What's not in the record.

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.
This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register.POEO public register

5 June 2017

Number	Name	Location	Type	Status	Issued date
12241	ELG RECYCLING PROCESSORS PTY. LTD.	70 Cosgrove Road, ENFIELD, NSW 2136	POEO licence	No longer in force	27-Jan-05
13425	JOHN HOLLAND PTY LTD	From the existing rail network at Glenfield west to Rossmore., GLENFIELD, NSW 2167	POEO licence	Surrendered	04-Aug-11
4614	L.A. KENNETT ENTERPRISES PTY LTD	CAMBRIDGE AVE, GLENFIELD, NSW 2167	POEO licence	Issued	12-Apr-01
6003	ORORA LIMITED	94-98 COSGROVE ROAD, ENFIELD, NSW 2136	POEO licence	Surrendered	28-Apr-00

List of NSW Contaminated Sites Notified to EPA as of 8 May 2017

Background

A strategy to systematically assess, prioritise and respond to notifications under Section 60 of the *Contaminated Land Management Act 1997* (CLM Act) has been developed by the EPA. This strategy acknowledges the EPA's obligations to make information available to the public under *Government Information (Public Access) Act 2009*.

When a site is notified to the EPA, it may be accompanied by detailed site reports where the owner has been proactive in addressing the contamination and its source. However, often there is minimal information on the nature or extent of the contamination.

For some notifications, the information indicates the contamination is securely immobilised within the site, such as under a building or carpark, and is not currently causing any offsite consequences to the community or environment. Such sites would still need to be cleaned up, but this could be done in conjunction with any subsequent building or redevelopment of the land. These sites may not require intervention under the CLM Act, but could be dealt with through the planning and development consent process.

Where indications are that the nominated site is causing actual harm to the environment or an unacceptable offsite impact (i.e. it is a "significantly contaminated site"), the EPA would apply the regulatory provisions of the CLM Act to have the responsible polluter and/or landowner investigate and remediate the site.

As such, the sites notified to the EPA and presented in the following table are at various stages of the assessment and/or remediation process. Understanding the nature of the underlying contamination, its implications and implementing a remediation program where required, can take a considerable period of time. The tables provide an indication, in relation to each nominated site, as to the management status of that particular site. Further detailed information may be available from the EPA or the responsible landowner.

The following questions and answers may assist those interested in this issue:

Frequently asked questions

What is the difference between the "List of NSW Contaminated Sites Notified to the EPA" and the "Contaminated Land: Record of Notices"?

A site will be on the Contaminated Land: Record of Notices only if the EPA has issued a regulatory notice in relation to the site under the *Contaminated Land Management Act 1997*.

The sites appearing on this "List of NSW contaminated sites notified to the EPA" indicate that the notifiers consider that the sites are contaminated and warrant reporting to the EPA. However, the contamination may or may not be significant enough to warrant regulation by the EPA. The EPA needs to review and, if necessary, obtain more information before it can make a determination as to whether the site warrants regulation.

Why my site appears on the list?

Your site appears on the list because of one or more of the following reasons:

- The site owner and/or the person partly or fully responsible for causing the contamination notified to the EPA about the contamination under Section 60 of the *Contaminated Land Management Act 1997*. In other words, the site owner or the "polluter" believes the site is contaminated.
- The EPA has been notified via other means and is satisfied that the site is or was contaminated.

Does the list contain all contaminated sites in NSW?

No. The list only contains contaminated sites that the EPA is aware of, with regard to its regulatory role under the CLM Act. An absence of a site from the list does not necessarily imply the site is not contaminated.

The EPA relies upon responsible parties to notify contaminated sites.

How are these notified contaminated sites managed by the EPA?

There are different ways that the EPA manages these notified contaminated sites. First, an initial assessment is carried out by the EPA. At the completion of the initial assessment, the EPA may take one or more than one of the following management approaches:

- The contamination warrants the EPA's direct regulatory intervention either under the *Contaminated Land Management Act 1997* or the *Protection of the Environment Operations Act 1997* (POEO Act), or both. Information about current or past regulatory action on this site can be found on EPA website.
- The contamination with respect to the current use or approved use of the site, as defined under the *Contaminated Land Management Act 1997,* is not significant enough that it warrants EPA regulation.
- The contamination does not require EPA regulation and can be managed by a planning approval process.
- The contamination is related to an operational Underground Petroleum Storage System, such as a service station or fuel depot. The contamination may be managed under the POEO Act and the Protection of the Environment Operation (Underground Petroleum Storage Systems) Regulation 2008.
- The contamination is being managed under a specifically tailored program operated by another agency (for example the Department of Industry and Investment's *Derelict Mines Program*).

I am the owner of a site that appears on the list. What should I do?

First of all, you should ensure the current use of the site is compatible with the site contamination. Secondly, if the site is the subject of EPA regulation, make sure you comply with the regulatory requirements, and you have considered your obligations to notify other parties who may be affected.

If you have any concerns, contact us and we may be able to offer you general advice, or direct you to accredited professionals who can assist with specific issues.

I am a prospective buyer of a site that appears on the list. What should I do?

You should seek advice from the vendor to put the contamination issue into perspective. You may need to seek independent expert advice.

The information provided in the list is meant to be indicative only, and a starting point for your own assessment. Site contamination as a legacy of past site uses is not uncommon,

particularly in an urbanised environment. If the contamination on a site is properly remediated or managed, it may not materially impact upon the intended future use of the site. However, each site needs to be considered in context.

List of NSW Contaminated Sites Notified to the EPA

Disclaimer

The EPA has taken all reasonable care to ensure that the information in the list of contaminated sites notified to the EPA (the list) is complete and correct. The EPA does not, however, warrant or represent that the list is free from errors or omissions or that it is exhaustive.

The EPA may, without notice, change any or all of the information in the list at any time.

You should obtain independent advice before you make any decision based on the information in the list.

The list is made available on the understanding that the EPA, its servants and agents, to the extent permitted by law, accept no responsibility for any damage, cost, loss or expense incurred by you as a result of:

1. any information in the list; or
2. any error, omission or misrepresentation in the list; or
3. any malfunction or failure to function of the list;
4. without limiting (2) or (3) above, any delay, failure or error in recording, displaying or updating information.

Site Status	Explanation
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or *Protection of the Environment Operations Act 1997*. Alternatively, the EPA may require information via a notice issued under s77 of the *Contaminated Land Management Act 1997* or issue a Preliminary Investigation Order.
Regulation under CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the *Contaminated Land Management Act 1997* is not required.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997*. A regulatory approach is being finalised.

Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the *Protection of the Environment Operations Act 1997* (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the *Environmental Planning and Assessment Act 1979* (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the *Contaminated Land Management Act 1997* (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the *Protection of the Environment Operations Act 1997* (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the *Environmental Planning and Assessment Act 1979* (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the *Contaminated Land Management Act 1997* (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record.

Suburb	Site Name	Site Address	Contamination Activity Type	EPA Management Class	Latitude	Longitude
ERINA	Former Frozen Food Distribution Depot	1 Aston ROAD	Other Petroleum	Contamination currently regulated under CLM Act	-33.434878	151.3845431
ERINA	Caltex Service Station	155 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.43824871	151.3801096
ERINA	Coles Express Service Station Erina	211 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.43547804	151.3850522
ERINA	7-Eleven Erina	214 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.43494257	151.3879511
ERINA	7-Eleven Service Station	96 The Entrance ROAD	Service Station	Regulation under CLM Act not required	-33.43786868	151.3729331
ERMINGTON	Caltex Service Station	562 Victoria ROAD	Service Station	Under assessment	-33.81392814	151.0547543
ERSKINE PARK	Western Sydney Service Centre	25-55 Templar ROAD	Landfill	Under assessment	-33.81897822	150.7937394
ERSKINEVILLE	Redevelopment Site	36/1A Coulson STREET	Unclassified	Under assessment	-33.90325501	151.1855668
ERSKINEVILLE	Department of Housing	52 John STREET	Other Industry	Regulation under CLM Act not required	-33.8982925	151.1840284
ERSKINEVILLE	RailCorp land	Coulson STREET	Other Industry	Under assessment	-33.90279502	151.1846827
EUABALONG WEST	BP Euabalong West Depot (Reliance Petroleum)	Corner Illawong Street and Murrin STREET	Other Petroleum	Under assessment	-33.05720426	146.3946386
EVANS HEAD	Evans Head Residential subdivision	Bounded by Currajong, Woodburn, Carrabeen Streets and Tuckeroo CRESCENT	Unclassified	Regulation under CLM Act not required	-29.1080969	153.4243577
EVANS HEAD	Evans Head Aerodrome	Memorial Airport DRIVE	Other Industry	Regulation under CLM Act not required	-29.10389976	153.4216791
EVANS HEAD	Bundjalung National Park	The Gap ROAD	Unclassified	Under assessment	-29.24433977	153.3626472
EVELEIGH	Macdonaldtown Triangle	Burren STREET	Gasworks	Contamination being managed via the planning process (EP&A Act)	-33.89803492	151.186059
EVELEIGH	Australian Technology Park	Henderson ROAD	Other Industry	Regulation under CLM Act not required	-33.89634136	151.1944915
FAIRFIELD	Endeavour Energy Fairfield Zone Substation	22 Hedges STREET	Other Industry	Regulation under CLM Act not required	-33.86133019	150.9555899
FAIRFIELD	Speedway Petroleum	251 The Horsley DRIVE	Service Station	Under assessment	-33.8711661	150.9630077
FAIRFIELD HEIGHTS	7-Eleven Fairfield Heights	234 Hamilton (Cnr The Boulevarde) ROAD	Service Station	Under assessment	-33.87208474	150.9373134
FAIRY MEADOW	Caltex Fuel Depot and adjoining land	46 Montague STREET	Service Station	Contamination formerly regulated under the CLM Act	-34.40050499	150.8953125
FAIRY MEADOW	Woolworths Petrol Service Station	49 Princes HIGHWAY	Service Station	Regulation under CLM Act not required	-34.39399705	150.8925369
FAIRY MEADOW	Deynal (Seeman)	51-59 Princes HIGHWAY	Service Station	Regulation under CLM Act not required	-34.39437085	150.8924666
FARLEY	Farley Waste Water Treatment Works	Owl Pen LANE	Other Industry	Under assessment	-32.74431314	151.5194217
FASSIFERN	Former Arsenic Smelter	Fassifern ROAD	Other Industry	Under assessment	-32.99649819	151.5618283
FASSIFERN	Newstan Colliery	Fassifern ROAD	Other Industry	Under assessment	-32.97942521	151.5660046
FEDERAL	Federal General Store	3-6 Federal DRIVE	Service Station	Contamination currently regulated under CLM Act	-28.65190728	153.4552976
FERN BAY	Former service station	37 Fullerton (1006 Nelson Bay Road) STREET	Service Station	Under assessment	-32.87245004	151.7939904
FIVE DOCK	7-Eleven Service Station	231-235 Great North ROAD	Service Station	Under assessment	-33.86488376	151.130002

Appendix C: Logs

BH01

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Douglas Partners
Total Hole Depth (mbgs): 2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger				Fill	Asphalt		
		0.05		Fill	Fill: Roadbase, gravelly sand, grey - brown	BH01-0.1-0.2 PID = 2.1 ppm	No asbestos odour or staining
		0.30		Fill	Fill: Clayey silt, brown, soft, non-plastic - low plasticity, dry, heterogeneous, with sand	BH01-0.3-0.4 PID = 1.6 ppm	No asbestos odour or staining
	0.5					BH01-0.4-0.5 PID = 1.4 ppm	No asbestos odour or staining
		0.70		CL	Clay, grey mottled red, medium - low plasticity, firm, dry, homogeneous, trace ironstone.		
	1.0					BH01-0.9-1.0 PID = 0.2 ppm	No asbestos odour or staining
		1.20		SHALE	Weathered siltsone, grey brown		
	1.5					BH01-1.4-1.5 PID = 0.4 ppm	No asbestos odour or staining
	2.0					BH01-1.9-2.0 PID = 0.2 ppm	No asbestos odour or staining
		2.00			Borehole BH01 terminated at 2m		End of investigation at target depth 2.0 mbgs in natural. Douglas Partners continued to 6.0 m bgs
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

BH02

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Douglas Partners
Total Hole Depth (mbgs): 1.2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger				Fill	Asphalt		
		0.05		Fill	Fill: Roadbase, gravelly sand, grey - brown	BH02-0.1-0.2 PID = 1.7 ppm	No asbestos odour or staining
						BH02-0.3-0.4 PID = 1.4 ppm	No asbestos odour or staining
	0.5	0.40		Fill	Fill: Gravelly clay, pale brown, low plasticity, firm, heterogeneous, dry, with sand	BH02-0.4-0.5 PID = 1.8 ppm	No asbestos odour or staining
		0.60		SHALE	Weathered siltsone, grey brown with ironstone bands		
	1.0					BH02-0.9-1.0 PID = 1.2 ppm	No asbestos odour or staining
		1.20			Borehole BH02 terminated at 1.2m		End of investigation at target depth 1.2 m bgs in natural. Douglas Partners continued to 6.0 m bgs
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

BH03

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Douglas Partners
Total Hole Depth (mbgs): 4
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger				Fill	Fill: Sandy silt, dark brown, soft, non plastic, fine grained, heterogeneous, dry with organic matter	BH03-0.0-0.1 PID = 3.4 ppm	No asbestos odour or staining
		0.20		Fill	Fill: Silty sand, brown, fine grained, well sorted, medium dense, dry, heterogeneous, with sandstone cobbles	BH03-0.2-0.3 PID = 2.1 ppm	No asbestos odour or staining
	0.5					BH03-0.4-0.5 PID = 2.1 ppm	No asbestos odour or staining
		0.70		Fill	Fill / reworked natural: Silty clay, pale brown, low plasticity, firm, heterogeneous, dry, with gravel, trace sand		
	1.0					BH03-0.9-1.0 PID = 1.1 ppm	No asbestos odour or staining
		1.20		CL	Clay, grey mottled red, medium - low plasticity, firm, dry, homogeneous, trace ironstone		
	1.5					BH03-1.4-1.5 PID = 0.6 ppm	No asbestos odour or staining
		1.70		SHALE	Weathered siltsone, grey brown with ironstone bands		
	2.0					BH03-1.9-2.0 PID = 0.4 ppm	No asbestos odour or staining
	2.5						
	3.0						
	3.5						
	4.0						End of hole at 4.0 m bgs in natural, at refusal on weathered rock.
		4.00			Borehole BH03 terminated at 4m		
	4.5						

BH04

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Douglas Partners
Total Hole Depth (mbgs): 1.3
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger				Fill	Asphalt		
		0.05		Fill	Fill: Roadbase, gravelly sand, grey - brown	BH04-0.1-0.2 PID = 0.4 ppm	No asbestos odour or staining
		0.30		Fill	Fill: Gravelly clay, brown mottled orange, medium plasticity, firm, heterogeneous, dry, with sand	BH04-0.4-0.5 PID = 0.7 ppm	QC1 and QA1 taken. No asbestos odour or staining
	0.5						
		0.80		CL	Clay, red mottled grey, medium plasticity, firm, homogeneous, dry, lense of weathered siltstone at 1.2 m bgs	BH04-0.9-1.0 PID = 0.3 ppm	No asbestos odour or staining
	1.0						
		1.30			Borehole BH04 terminated at 1.3m		End of investigation at target depth 1.3 m bgs in natural. Douglas Partners continued to 6.0 m bgs
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

BH05

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Douglas Partners
Total Hole Depth (mbgs): 2
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger				Fill	Asphalt		
		0.05		Fill	Fill: Roadbase, gravelly sand, brown, with sandstone cobbles	BH05-0.1-0.2 PID = 1.9 ppm	No asbestos odour or staining
		0.30		Fill	Fill: Weathered sandstone, pale brown, medium grained, loose	BH05-0.3-0.4 PID = 0.4 ppm	No asbestos odour or staining
	0.5					BH05-0.4-0.5 PID = 0.2 ppm	No asbestos odour or staining
		0.70		CL	Clay, brown mottled red, low plasticity, firm, homogeneous, dry, trace ironstone gravels		
	1.0					BH05-0.9-1.0 PID = 0 ppm	No asbestos odour or staining
	1.5					BH05-1.4-1.5 PID = 1.6 ppm	No asbestos odour or staining
	2.0	1.90		SHALE	Weathered siltsone, grey brown with ironstone bands		End of investigation at target depth 2.0 m bgs in natural. Douglas Partners continued to 6.0 m bgs
		2.00			Borehole BH05 terminated at 2m		
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

BH06

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Douglas Partners
Total Hole Depth (mbgs): 1.5
Bore Diameter (mm):

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger				Fill	Asphalt		
		0.05		Fill	Fill: Roadbase, gravelly sand, grey - brown	BH06-0.1-0.2 PID = 0.2 ppm	No asbestos odour or staining
		0.20		Fill	Fill: Gravelly sandy clay, red mottled brown, medium plasticity, firm, dry, heterogeneous	BH06-0.2-0.3 PID = 0.5 ppm	No asbestos odour or staining
	0.5					BH06-0.4-0.5 PID = 0.3 ppm	No asbestos odour or staining
	1.0						
		1.10		CL	Clay, grey mottled red, medium - low plasticity, hard, dry, homogeneous, trace ironstone	BH06-1.1-1.2 PID = 0 ppm	No asbestos odour or staining
	1.5						End of investigation at target depth 1.5 m bgs in natural. Douglas Partners continued to 6.0 m bgs
		1.50			Borehole BH06 terminated at 1.5m		
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

BH07

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Not applicable
Total Hole Depth (mbgs): 0.7
Bore Diameter (mm): 100

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Fill: Sandy silt, dark brown, soft, non-plastic, fine grained, heterogeneous, dry with gravels	BH07-0.0-0.1 PID = 2.7 ppm	No asbestos odour or staining
		0.20		Fill	Fill: Gravelly silty clay, brown, medium plasticity, firm, heterogeneous, dry, with sandstone and igneous gravels	BH07-0.2-0.3 PID = 2.3 ppm	No asbestos odour or staining
	0.5	0.40		CL	Clay, brown mottled red, medium plasticity, firm, homogeneous, dry, trace igneous gravels	BH07-0.6-0.7 PID = 1.5 ppm	No asbestos odour or staining
		0.70			Borehole BH07 terminated at 0.7m		End of hole at target depth 0.7 m bgs in natural.
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

BH08

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Not applicable
Total Hole Depth (mbgs): 1
Bore Diameter (mm): 100

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger	0.5			Fill	Fill: Sandy silt, dark brown, soft, non-plastic, fine grained, heterogeneous, dry with organic matter, trace cobbles	BH08-0.0-0.1 PID = 6.4 ppm	No asbestos odour or staining
						BH08-0.2-0.3 PID = 4.4 ppm	No asbestos odour or staining
						BH08-0.4-0.5 PID = 2.1 ppm	No asbestos odour or staining
	1.0	0.80		CL	Clay, red mottled grey, medium plasticity, firm, homogeneous, dry - moist	BH08-0.9-1.0 PID = 1.4 ppm	No asbestos odour or staining
		1.00			Borehole BH08 terminated at 1m		End of hole at target depth 1.0 m bgs in natural.
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

BH09

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Not applicable
Total Hole Depth (mbgs): 0.7
Bore Diameter (mm): 100

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Fill: Sandy silt, dark brown, soft, non-plastic, fine grained, heterogeneous, dry with organic matter	BH09-0.0-0.1 PID = 0.7 ppm	No asbestos odour or staining
		0.20		Fill	Fill: Gravelly sand, brown, medium grained, well sorted, medium dense, heterogeneous, dry	BH09-0.3-0.4 PID = 0.3 ppm	No asbestos odour or staining
	0.5					BH09-0.4-0.5 PID = 0.2 ppm	No asbestos odour or staining
		0.70			Borehole BH09 terminated at 0.7m		End of hole at 0.7 m bgs due to refusal on tree roots and gravel.
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

BH10

Project Number: 52680
Client: Tian An Enfield Pty Ltd
Project Name: Mitchell St Enfield PSI
Site Address: 4 Mitchell Street Enfield

Date: 1/05/2017
Logged By: NW
Contractor: Not applicable
Total Hole Depth (mbgs): 0.3
Bore Diameter (mm): 100

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area: -
Reference Level: Ground Surface
Elevation (m):

Method	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Hand Auger				Fill	Fill: Gravelly sandy silt, brown, soft, non-plastic, heterogeneous, dry	BH10-0.0-0.1 PID = 0.6 ppm	No asbestos odour or staining
		0.30			Borehole BH10 terminated at 0.3m		End of hole at 0.3 m bgs in fill due to drill rig commencement.
	0.5						
	1.0						
	1.5						
	2.0						
	2.5						
	3.0						
	3.5						
	4.0						
	4.5						

Appendix D: Laboratory Certificates and COC Documentation

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 166044

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: S Molinari, N Wells

Sample log in details:

Your Reference:	**52680, Mitchell St, Enfield DSI**		
No. of samples:	1 Soil		
Date samples received / completed instructions received	01/05/17	/	01/05/17

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:	8/05/17	/	5/05/17
Date of Preliminary Report:	Not Issued		

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Accredited for compliance with ISO/IEC 17025 - Testing **Tests not covered by NATA are denoted with *.**

Results Approved By:

David Springer
General Manager

vTRH(C6-C10)/BTEXN in Soil		
Our Reference:	UNITS	166044-1
Your Reference	---------- -	QC1
Date Sampled	----------	28/04/2017
Type of sample		Soil
Date extracted	-	02/05/2017
Date analysed	-	04/05/2017
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
Total +ve Xylenes	mg/kg	<1
naphthalene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	100

svTRH (C10-C40) in Soil		
Our Reference:	UNITS	166044-1
Your Reference	---------- -	QC1
Date Sampled	----------	28/04/2017
Type of sample		Soil
Date extracted	-	02/05/2017
Date analysed	-	03/05/2017
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
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	86

Acid Extractable metals in soil		
Our Reference:	UNITS	166044-1
Your Reference	----------	QC1
	-	
Date Sampled	----------	28/04/2017
Type of sample		Soil
Date prepared	-	02/05/2017
Date analysed	-	02/05/2017
Arsenic	mg/kg	6
Cadmium	mg/kg	<0.4
Chromium	mg/kg	21
Copper	mg/kg	24
Lead	mg/kg	12
Mercury	mg/kg	<0.1
Nickel	mg/kg	25
Zinc	mg/kg	32

Moisture		
Our Reference:	UNITS	166044-1
Your Reference	----------	QC1
	-	
Date Sampled	----------	28/04/2017
Type of sample		Soil
Date prepared	-	2/05/2017
Date analysed	-	3/05/2017
Moisture	%	16

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-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. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.
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.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 °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	-			02/05/2017	[NT]	[NT]	LCS-2	02/05/2017
Date analysed	-			04/05/2017	[NT]	[NT]	LCS-2	04/05/2017
TRHC$_6$ - C$_9$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-2	88%
TRHC$_6$ - C$_{10}$	mg/kg	25	Org-016	<25	[NT]	[NT]	LCS-2	88%
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	LCS-2	97%
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	LCS-2	80%
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-2	85%
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	LCS-2	89%
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	LCS-2	87%
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	110	[NT]	[NT]	LCS-2	111%

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	-			02/05/2017	[NT]	[NT]	LCS-2	02/05/2017
Date analysed	-			02/05/2017	[NT]	[NT]	LCS-2	02/05/2017
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-2	106%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	101%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	91%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-2	106%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	101%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-2	91%
Surrogate o-Terphenyl	%		Org-003	94	[NT]	[NT]	LCS-2	119%

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 prepared	-			02/05/2017	[NT]	[NT]	LCS-2	02/05/2017
Date analysed	-			02/05/2017	[NT]	[NT]	LCS-2	02/05/2017
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	LCS-2	109%
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	LCS-2	101%
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-2	105%
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-2	107%
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-2	105%
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	LCS-2	104%
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-2	96%
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	LCS-2	101%

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
NR: 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 (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

012428

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 52680
PROJECT NAME: Mitchell St Enfield DSI
DATE NEEDED BY: Std MT

LABORATORY BATCH NO.:
SAMPLERS: NWells
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....SMolinari.....@jbsg.com.au; (3) .....NWells.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Haugmetals	TRH/BTEX	OAH	Phenol	PCB	CEC	Clay	Asbestos NA	BTEX	OCP/OPP	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
1	QC1	Soil	28.4		Jar + bag ice		X	X											

ENVIROLAB

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 166044
Date Received: 1/5/17
Time Received: 12.05
Received by: DW
Temp: Cool/Ambient
Cooling: Ice/Icepack 10.6
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: NWells DATE: 1/5/17	CONSIGNMENT NOTE NO.	NAME: DW	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 1/5/17 12.05	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 167217

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: N Wells

Sample log in details:

Your Reference:	**52680, Enfield DD**
No. of samples:	1 Water
Date samples received / completed instructions received	16/05/2017 / 16/05/2017

Analysis Details:

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

Report Details:

Date results requested by: / Issue Date:	23/05/17 / 22/05/17
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 - Testing **Tests not covered by NATA are denoted with *.**

Results Approved By:

David Springer
General Manager

vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	167217-1
Your Reference	---------- -	QC1
Date Sampled	----------	16/05/2017
Type of sample		Water
Date extracted	-	17/05/2017
Date analysed	-	18/05/2017
TRHC$_6$ - C$_9$	µg/L	<10
TRHC$_6$ - C$_{10}$	µg/L	<10
TRHC$_6$ - C$_{10}$ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	103
Surrogate toluene-d8	%	97
Surrogate 4-BFB	%	110

svTRH (C10-C40) in Water		
Our Reference:	UNITS	167217-1
Your Reference	---------- -	QC1
Date Sampled	----------	16/05/2017
Type of sample		Water
Date extracted	-	18/05/2017
Date analysed	-	19/05/2017
TRHC$_{10}$ - C$_{14}$	µg/L	<50
TRHC$_{15}$ - C$_{28}$	µg/L	<100
TRHC$_{29}$ - C$_{36}$	µg/L	<100
TRH>C$_{10}$ - C$_{16}$	µg/L	<50
TRH>C$_{10}$ - C$_{16}$ less Naphthalene (F2)	µg/L	<50
TRH>C$_{16}$ - C$_{34}$	µg/L	<100
TRH>C$_{34}$ - C$_{40}$	µg/L	<100
Surrogate o-Terphenyl	%	77

PAHs in Water		
Our Reference:	UNITS	167217-1
Your Reference	----------	QC1
	-	
Date Sampled	----------	16/05/2017
Type of sample		Water
Date extracted	-	18/05/2017
Date analysed	-	19/05/2017
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	122

Total Phenolics in Water		
Our Reference:	UNITS	167217-1
Your Reference	----------	QC1
	-	
Date Sampled	----------	16/05/2017
Type of sample		Water
Date extracted	-	17/05/2017
Date analysed	-	17/05/2017
Total Phenolics (as Phenol)	mg/L	<0.05

HM in water - dissolved		
Our Reference:	UNITS	167217-1
Your Reference	----------	QC1
	-	
Date Sampled	----------	16/05/2017
Type of sample		Water
Date prepared	-	18/05/2017
Date analysed	-	18/05/2017
Arsenic-Dissolved	µg/L	5
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	5
Zinc-Dissolved	µg/L	2

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-013	Water samples are analysed directly 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.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Inorg-031	Total Phenolics by segmented flow analyser (in line distillation with colourimetric finish). Solids are extracted in a caustic media prior to analysis.
Metals-022	Determination of various metals by ICP-MS.
Metals-021	Determination of Mercury by Cold Vapour AAS.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			17/05/2017	[NT]	[NT]	LCS-W1	17/05/2017
Date analysed	-			18/05/2017	[NT]	[NT]	LCS-W1	18/05/2017
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	98%
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	98%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	89%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	95%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	98%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	104%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	104%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	106	[NT]	[NT]	LCS-W1	89%
Surrogate toluene-d8	%		Org-016	97	[NT]	[NT]	LCS-W1	105%
Surrogate 4-BFB	%		Org-016	100	[NT]	[NT]	LCS-W1	110%

QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2017	[NT]	[NT]	LCS-W1	18/05/2017
Date analysed	-			18/05/2017	[NT]	[NT]	LCS-W1	18/05/2017
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	98%
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	101%
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	84%
TRH>C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	98%
TRH>C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	101%
TRH>C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	84%
Surrogate o-Terphenyl	%		Org-003	70	[NT]	[NT]	LCS-W1	89%

QUALITY CONTROL PAHs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			18/05/2017	[NT]	[NT]	LCS-W1	18/05/2017
Date analysed	-			19/05/2017	[NT]	[NT]	LCS-W1	19/05/2017
Naphthalene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	75%
Acenaphthylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	112%
Phenanthrene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	131%
Anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	120%
Pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	118%
Benzo(a)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL PAHs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Chrysene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	100%
Benzo(b,j+k) fluoranthene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	125%
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	80	[NT]	[NT]	LCS-W1	128%
QUALITY CONTROL Total Phenolics in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			17/05/2017	[NT]	[NT]	LCS-W1	17/05/2017
Date analysed	-			17/05/2017	[NT]	[NT]	LCS-W1	17/05/2017
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-031	<0.05	[NT]	[NT]	LCS-W1	100%
QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			18/05/2017	167217-1	18/05/2017 || 18/05/2017	LCS-W1	18/05/2017
Date analysed	-			18/05/2017	167217-1	18/05/2017 || 18/05/2017	LCS-W1	18/05/2017
Arsenic-Dissolved	µg/L	1	Metals-022	<1	167217-1	5 || 5 || RPD: 0	LCS-W1	99%
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	167217-1	<0.1 || <0.1	LCS-W1	104%
Chromium-Dissolved	µg/L	1	Metals-022	<1	167217-1	<1 || <1	LCS-W1	93%
Copper-Dissolved	µg/L	1	Metals-022	<1	167217-1	<1 || <1	LCS-W1	89%
Lead-Dissolved	µg/L	1	Metals-022	<1	167217-1	<1 || <1	LCS-W1	106%
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	167217-1	<0.05 || [N/T]	LCS-W1	98%
Nickel-Dissolved	µg/L	1	Metals-022	<1	167217-1	5 || 5 || RPD: 0	LCS-W1	99%
Zinc-Dissolved	µg/L	1	Metals-022	<1	167217-1	2 || 2 || RPD: 0	LCS-W1	99%

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
NR: 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 (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

012472

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 52680	LABORATORY BATCH NO.:
PROJECT NAME: Enfield DD	SAMPLERS: NWells
DATE NEEDED BY: Std TAT	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) NWells S.Molinari@jbsg.com.au; (3) N.wells@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy metals	TRH	BTEX	PAH	Phenols	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
QC1	Water	16/5		bottles + vials + ice		X	X	X	X	X			

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

Job No: 167217
Date Received: 16/5/17
Time Received: 16:20
Received by: JYH
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: NWells DATE: 16/5/17	CONSIGNMENT NOTE NO.	NAME: JYH	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 16/5/17	
		OF: ELS	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

012425

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 57680
PROJECT NAME: Mitchell Street Enfield DSI
DATE NEEDED BY: STD TAT
LABORATORY BATCH NO.:
SAMPLERS: NWells
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) ...SMalouf.....@jbsg.com.au; (3) .....NWells.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

544088

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy metals	TRH/BTEX	PAH	Phenols	Pest/PCB	OC	Clay	Asbestos in Soil	BTEX	Halo	OCP/OPP	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH02-0.1-0.2	~~Soil~~	28.4		Jar + bag + ice											X				
BH02-0.3-0.4															X				
BH02-0.4-0.5						X	X												
BH02-0.9-1.0															X				
BH04-0.1-0.2															X				
BH04-0.4-0.5						X	X	X	X	X			X			X			
BH04-0.9-1.0															X				
BH06-0.1-0.2															X				
BH06-0.2-0.3						X	X				X	X							
BH06-0.4-0.5															X				
BH06-1.1-1.2															X				
BH07-0.0-0.1															X				
BH07-0.2-0.3						X	X												
BH07-0.6-0.7															X				
BH08-0.0-0.1															X				
BH08-0.2-0.3						X	X												
BH08-0.4-0.5															X				
BH08-0.9-1.0															X				
BH09-0.0-0.1	V														X				

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: NWells DATE: 28.4.17	CONSIGNMENT NOTE NO.	NAME: Jupan DATE: 17:02	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE: 28/04	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

012426

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: S2680 | LABORATORY BATCH NO.:

PROJECT NAME: Mitchell St Enfield NSW | SAMPLERS: NWells

DATE NEEDED BY: Std TAT | QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) SMolinari@jbsg.com.au; (3) NWells@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

544088

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	HM/Hydride	TRH/BTEX	PAH	Phenol	PCB	CEC	Clay	Asbestos W.A	BTEX	HOLD	OCP/OPP	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
BH09 - 0.3 - 0.4	Soil	25.4		Jar + bag + ice											X				
BH09 - 0.4 - 0.5	↓					X	X	X	X	X			X			X			
BH10 - 0.0 - 0.1	↓					X	X	X	X	X			X			X			
QA20170428						X	X												
RB 20170428	Water	28.4		bottles + vials + ice		X	X	X	X	X					X				
TB 20170428	↓			vials + ice										X					
TS20170428	↓			↓										X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: NWells DATE: 28-4-17	CONSIGNMENT NOTE NO.	NAME: Rupali DATE: 17:02	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF:	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE: 28/04	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1254 &
Site# 1254

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:** **Phone:** **Fax:**	544088 02 8245 0300
Project Name:	MITCHELL STREET ENFIELD DSI		
Project ID:	52680		

Received:	Apr 28, 2017 5:02 PM
Due:	May 5, 2017
Priority:	5 Day
Contact Name:	Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271																	X	
ydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 18217																		
ternal Laboratory																		
o	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID													
	BH02_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23236								X		X	X		X
	BH04_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23237		X		X	X	X	X	X	X	X	X		X
	BH06_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23238	X							X		X	X	X	X
	BH07_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23239								X		X	X		X
	BH08_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23240								X		X	X		X
	BH09_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23241		X		X	X	X	X	X	X	X	X		X
	BH10_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23242		X		X	X	X	X	X	X	X	X		X
	QA120170428	Apr 28, 2017		Soil	S17-Ap23243								X		X	X		X
	RB20170428	Apr 28, 2017		Water	S17-Ap23244				X			X	X	X	X			X

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:** **Phone:** **Fax:**	544088 02 8245 0300
Project Name:	MITCHELL STREET ENFIELD DSI		
Project ID:	52680		

Received:	Apr 28, 2017 5:02 PM
Due:	May 5, 2017
Priority:	5 Day
Contact Name:	Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail					% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271																X	
ydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794					X												
erth Laboratory - NATA Site # 18217																	
	TB20170428	Apr 28, 2017		Water	S17-Ap23245									X			
	TS20170428	Apr 28, 2017		Water	S17-Ap23246									X			
	BH02_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23247		X										
	BH02_0.3-0.4	Apr 28, 2017		Soil	S17-Ap23248		X										
	BH02_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23249		X										
	BH04_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23250		X										
	BH04_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23251		X										
	BH06_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23252		X										
	BH06_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23253		X										
	BH06_1.1-1.2	Apr 28, 2017		Soil	S17-Ap23254		X										
	BH07_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23255		X										
	BH07_0.6-0.7	Apr 28, 2017		Soil	S17-Ap23256		X										

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Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271																	X	
ydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 18217																		
	BH08_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23257			X										
	BH08_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23258			X										
	BH08_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23259			X										
	BH09_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23260			X										
	BH09_0.3-0.4	Apr 28, 2017		Soil	S17-Ap23261			X										
st Counts						1	3	15	4	3	3	4	9	4	11	8	1	9

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Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention:	Seth Molinari
Report	544088-AID
Project Name	MITCHELL STREET ENFIELD DSI
Project ID	52680
Received Date	Apr 28, 2017
Date Reported	May 05, 2017

Methodology:

Asbestos ID	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. Bulk samples include building materials, soils and ores.
Subsampling Soil Samples	The whole sample submitted is first dried and then sieved through a 10mm sieve followed by a 2mm sieve. All fibrous matter viz greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) Iron ores - Sampling and Sample preparation procedures is employed. Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis in accordance with AS 4964-2004.
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated and where required interfering organic fibres or matter may be removed by treating the sample for several hours at a temperature not exceeding 400 ± 30°C. The resultant material is then ground and examined in accordance with AS 4964-2004.
Limit of Reporting	The nominal detection limit of the AS4964 method is around 0.01%. The examination of large sample sizes (at least 500 ml is recommended) may improve the likelihood of identifying asbestos material in the greater than 2 mm fraction. The NEPM screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures. This screening level is not applicable to free fibres. NOTE: NATA News, September 2011 – page 34, states, “Weighing of fibres is problematic and can lead to loss of fibres and potential exposure for laboratory analysts. To request laboratories to report information which is outside the scope of AS 4964-2004 and the scope of their accreditation is misleading and is most unwise” therefore such values reported are outside the scope of Eurofins | mgt NATA accreditation as designated by an asterisk.

Project Name MITCHELL STREET ENFIELD DSI
Project ID 52680
Date Sampled Apr 28, 2017
Report 544088-AID

Client Sample ID	Eurofins | mgt Sample No.	Date Sampled	Sample Description	Result
BH04_0.4-0.5	17-Ap23237	Apr 28, 2017	Approximate Sample 568g Sample consisted of: Dark brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH09_0.4-0.5	17-Ap23241	Apr 28, 2017	Approximate Sample 1029g Sample consisted of: Dark brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]
BH10_0.0-0.1	17-Ap23242	Apr 28, 2017	Approximate Sample 733g Sample consisted of: Dark brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.[M11]

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Apr 28, 2017	Indefinite

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NATA # 1261 Site # 20794

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NATA # 1261
Site # 18217

Company Name: JBS & G Australia (NSW) P/L
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Project Name: MITCHELL STREET ENFIELD DSI
Project ID: 52680

Order No.:
Report #: 544088
Phone: 02 8245 0300
Fax:

Received: Apr 28, 2017 5:02 PM
Due: May 5, 2017
Priority: 5 Day
Contact Name: Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271																	X	
Sydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 18217																		
External Laboratory																		
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
1	BH02_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23236								X		X	X		X
2	BH04_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23237		X		X	X	X	X	X	X	X	X		X
3	BH06_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23238	X							X		X	X	X	X
4	BH07_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23239								X		X	X		X
5	BH08_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23240								X		X	X		X
6	BH09_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23241		X		X	X	X	X	X	X	X	X		X
7	BH10_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23242		X		X	X	X	X	X	X	X	X		X
8	QA120170428	Apr 28, 2017		Soil	S17-Ap23243								X		X	X		X
9	RB20170428	Apr 28, 2017		Water	S17-Ap23244				X			X	X	X	X			X

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Company Name: JBS & G Australia (NSW) P/L
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Project Name: MITCHELL STREET ENFIELD DSI
Project ID: 52680

Order No.:
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Phone: 02 8245 0300
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Received: Apr 28, 2017 5:02 PM
Due: May 5, 2017
Priority: 5 Day
Contact Name: Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271																	X	
Sydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 18217																		
10	TB20170428	Apr 28, 2017		Water	S17-Ap23245										X			
11	TS20170428	Apr 28, 2017		Water	S17-Ap23246										X			
12	BH02_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23247			X										
13	BH02_0.3-0.4	Apr 28, 2017		Soil	S17-Ap23248			X										
14	BH02_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23249			X										
15	BH04_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23250			X										
16	BH04_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23251			X										
17	BH06_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23252			X										
18	BH06_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23253			X										
19	BH06_1.1-1.2	Apr 28, 2017		Soil	S17-Ap23254			X										
20	BH07_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23255			X										
21	BH07_0.6-0.7	Apr 28, 2017		Soil	S17-Ap23256			X										

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Project Name: MITCHELL STREET ENFIELD DSI
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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271																	X	
Sydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794						X												
Perth Laboratory - NATA Site # 18217																		
22	BH08_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23257			X										
23	BH08_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23258			X										
24	BH08_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23259			X										
25	BH09_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23260			X										
26	BH09_0.3-0.4	Apr 28, 2017		Soil	S17-Ap23261			X										
Test Counts						1	3	15	4	3	3	4	9	4	11	8	1	9

Internal Quality Control Review and Glossary

General

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

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

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

Terms

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

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N/A	Not applicable
M11	NATA accreditation does not cover the performance of this service.

Authorised by:

Nibha Vaidya Senior Analyst - Asbestos (NSW)

Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Uncertainty data is available on request

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Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Seth Molinari**

Report **544088-S**
Project name MITCHELL STREET ENFIELD DSI
Project ID 52680
Received Date Apr 28, 2017

Client Sample ID			**BH02_0.4-0.5**	**BH04_0.4-0.5**	**BH06_0.2-0.3**	**BH07_0.2-0.3**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins | mgt Sample No.			**S17-Ap23236**	**S17-Ap23237**	**S17-Ap23238**	**S17-Ap23239**
Date Sampled			**Apr 28, 2017**	**Apr 28, 2017**	**Apr 28, 2017**	**Apr 28, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	[R16]< 200	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	60
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	60
BTEX						
Comments					R16	
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 5	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 5	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 5	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 10	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 5	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 15	< 0.3
4-Bromofluorobenzene (surr.)	1	%	72	68	72	70
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	[R16]< 5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	[R16]< 500	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	[R16]< 500	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	-	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	-	-
Acenaphthene	0.5	mg/kg	-	< 0.5	-	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	-	-
Anthracene	0.5	mg/kg	-	< 0.5	-	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	-	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	-	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	-	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	-	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Chrysene	0.5	mg/kg	-	< 0.5	-	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	-	-
Fluoranthene	0.5	mg/kg	-	< 0.5	-	-
Fluorene	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID			BH02_0.4-0.5	BH04_0.4-0.5	BH06_0.2-0.3	BH07_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Ap23236	S17-Ap23237	S17-Ap23238	S17-Ap23239
Date Sampled			Apr 28, 2017	Apr 28, 2017	Apr 28, 2017	Apr 28, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	-	-
Naphthalene	0.5	mg/kg	-	< 0.5	-	-
Phenanthrene	0.5	mg/kg	-	< 0.5	-	-
Pyrene	0.5	mg/kg	-	< 0.5	-	-
Total PAH*	0.5	mg/kg	-	< 0.5	-	-
2-Fluorobiphenyl (surr.)	1	%	-	73	-	-
p-Terphenyl-d14 (surr.)	1	%	-	76	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-BHC	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-BHC	0.05	mg/kg	-	< 0.05	-	-
d-BHC	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.2	mg/kg	-	< 0.2	-	-
Toxaphene	1	mg/kg	-	< 1	-	-
Dibutylchlorendate (surr.)	1	%	-	52	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	95	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Bolstar	0.2	mg/kg	-	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	-
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	0.2	mg/kg	-	< 0.2	-	-
Demeton-O	0.2	mg/kg	-	< 0.2	-	-
Diazinon	0.2	mg/kg	-	< 0.2	-	-
Dichlorvos	0.2	mg/kg	-	< 0.2	-	-
Dimethoate	0.2	mg/kg	-	< 0.2	-	-
Disulfoton	0.2	mg/kg	-	< 0.2	-	-
EPN	0.2	mg/kg	-	< 0.2	-	-
Ethion	0.2	mg/kg	-	< 0.2	-	-
Ethoprop	0.2	mg/kg	-	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	-
Fenitrothion	0.2	mg/kg	-	< 0.2	-	-

Client Sample ID			BH02_0.4-0.5	BH04_0.4-0.5	BH06_0.2-0.3	BH07_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Ap23236	S17-Ap23237	S17-Ap23238	S17-Ap23239
Date Sampled			Apr 28, 2017	Apr 28, 2017	Apr 28, 2017	Apr 28, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Fensulfothion	0.2	mg/kg	-	< 0.2	-	-
Fenthion	0.2	mg/kg	-	< 0.2	-	-
Malathion	0.2	mg/kg	-	< 0.2	-	-
Merphos	0.2	mg/kg	-	< 0.2	-	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-	-
Mevinphos	0.2	mg/kg	-	< 0.2	-	-
Monocrotophos	2	mg/kg	-	< 2	-	-
Omethoate	2	mg/kg	-	< 2	-	-
Phorate	0.2	mg/kg	-	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-	-
Ronnel	0.2	mg/kg	-	< 0.2	-	-
Terbufos	0.2	mg/kg	-	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg	-	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	-	96	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	-	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	-	-
Total PCB*	0.5	mg/kg	-	< 0.5	-	-
Dibutylchlorendate (surr.)	1	%	-	52	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	95	-	-
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	-	-
2.4.6-Trichlorophenol	1.0	mg/kg	-	< 1	-	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	-	-
4-Chloro-3-methylphenol	1.0	mg/kg	-	< 1	-	-
Pentachlorophenol	1.0	mg/kg	-	< 1	-	-
Tetrachlorophenols - Total	1.0	mg/kg	-	< 1	-	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	-	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	-	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	-	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	-	-
2-Nitrophenol	1	mg/kg	-	< 1	-	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	-	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	-	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	-	-
4-Nitrophenol	5	mg/kg	-	< 5	-	-
Dinoseb	20	mg/kg	-	< 20	-	-
Phenol	0.5	mg/kg	-	< 0.5	-	-

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH02_0.4-0.5 Soil S17-Ap23236 Apr 28, 2017	BH04_0.4-0.5 Soil S17-Ap23237 Apr 28, 2017	BH06_0.2-0.3 Soil S17-Ap23238 Apr 28, 2017	BH07_0.2-0.3 Soil S17-Ap23239 Apr 28, 2017
Phenols (non-Halogenated)						
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	-	-
Phenol-d6 (surr.)	1	%	-	66	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
% Clay	1	%	-	-	8.8	-
Conductivity (1:5 aqueous extract at 25°C)	10	uS/cm	-	-	90	-
% Moisture	1	%	6.7	18	13	18
Ion Exchange Properties						
Cation Exchange Capacity	0.05	meq/100g	-	-	15	-
Heavy Metals						
Arsenic	2	mg/kg	3.5	5.7	5.9	16
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	19	22	16
Copper	5	mg/kg	25	28	11	12
Lead	5	mg/kg	17	13	30	49
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	19	36	17	5.1
Zinc	5	mg/kg	54	39	33	68

Client Sample ID Sample Matrix Eurofins | mgt Sample No. Date Sampled Test/Reference	LOR	Unit	BH08_0.2-0.3 Soil S17-Ap23240 Apr 28, 2017	BH09_0.4-0.5 Soil S17-Ap23241 Apr 28, 2017	BH10_0.0-0.1 Soil S17-Ap23242 Apr 28, 2017	QA120170428 Soil S17-Ap23243 Apr 28, 2017
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	54	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	94	170	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	148	170	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	70	62	68	71
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20

Client Sample ID			BH08_0.2-0.3	BH09_0.4-0.5	BH10_0.0-0.1	QA120170428
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Ap23240	S17-Ap23241	S17-Ap23242	S17-Ap23243
Date Sampled			Apr 28, 2017	Apr 28, 2017	Apr 28, 2017	Apr 28, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	1.2	1.2	-
Acenaphthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	-	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	-	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	-	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	-	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	-	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	-	76	76	-
p-Terphenyl-d14 (surr.)	1	%	-	77	76	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	< 0.05	-
a-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
b-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
d-BHC	0.05	mg/kg	-	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	-	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	-	< 0.05	< 0.05	-
g-BHC (Lindane)	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	-	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	< 0.05	-
Methoxychlor	0.2	mg/kg	-	< 0.2	< 0.2	-
Toxaphene	1	mg/kg	-	< 1	< 1	-
Dibutylchlorendate (surr.)	1	%	-	58	56	-
Tetrachloro-m-xylene (surr.)	1	%	-	76	80	-

Client Sample ID			BH08_0.2-0.3	BH09_0.4-0.5	BH10_0.0-0.1	QA120170428
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Ap23240	S17-Ap23241	S17-Ap23242	S17-Ap23243
Date Sampled			Apr 28, 2017	Apr 28, 2017	Apr 28, 2017	Apr 28, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	-	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	-	< 2	< 2	-
Demeton-S	0.2	mg/kg	-	< 0.2	< 0.2	-
Demeton-O	0.2	mg/kg	-	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	-	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	-	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	-	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	-	< 0.2	< 0.2	-
EPN	0.2	mg/kg	-	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	-	< 0.2	< 0.2	-
Ethoprop	0.2	mg/kg	-	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	-	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	-	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	-	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	-	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	-	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	-	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	-	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	-	< 2	< 2	-
Omethoate	2	mg/kg	-	< 2	< 2	-
Phorate	0.2	mg/kg	-	< 0.2	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	-	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	-	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	-	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	-	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	-	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	-	98	98	-
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	< 0.1	-
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	-
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	-
Total PCB*	0.5	mg/kg	-	< 0.5	< 0.5	-
Dibutylchlorendate (surr.)	1	%	-	58	56	-
Tetrachloro-m-xylene (surr.)	1	%	-	76	80	-

Client Sample ID			BH08_0.2-0.3	BH09_0.4-0.5	BH10_0.0-0.1	QA120170428
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins | mgt Sample No.			S17-Ap23240	S17-Ap23241	S17-Ap23242	S17-Ap23243
Date Sampled			Apr 28, 2017	Apr 28, 2017	Apr 28, 2017	Apr 28, 2017
Test/Reference	LOR	Unit				
Phenols (Halogenated)						
2-Chlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	-	< 1	< 1	-
2.4.6-Trichlorophenol	1.0	mg/kg	-	< 1	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	-	< 0.5	< 0.5	-
4-Chloro-3-methylphenol	1.0	mg/kg	-	< 1	< 1	-
Pentachlorophenol	1.0	mg/kg	-	< 1	< 1	-
Tetrachlorophenols - Total	1.0	mg/kg	-	< 1	< 1	-
Total Halogenated Phenol*	1	mg/kg	-	< 1	< 1	-
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	-	< 20	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	-	< 5	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	-	< 0.2	< 0.2	-
2-Nitrophenol	1	mg/kg	-	< 1	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	-	< 0.5	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	-	< 5	< 5	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	-	< 0.4	< 0.4	-
4-Nitrophenol	5	mg/kg	-	< 5	< 5	-
Dinoseb	20	mg/kg	-	< 20	< 20	-
Phenol	0.5	mg/kg	-	< 0.5	< 0.5	-
Total Non-Halogenated Phenol*	20	mg/kg	-	< 20	< 20	-
Phenol-d6 (surr.)	1	%	-	70	74	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	120	100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	100	< 100
% Moisture	1	%	7.9	5.7	9.4	15
Heavy Metals						
Arsenic	2	mg/kg	3.0	< 2	5.7	4.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	11	34	8.5	16
Copper	5	mg/kg	11	46	17	30
Lead	5	mg/kg	17	< 5	3500	12
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.9	160	6.8	31
Zinc	5	mg/kg	28	59	44	35

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	May 04, 2017	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 04, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 04, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	May 04, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	May 03, 2017	14 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Organochlorine Pesticides	Sydney	May 03, 2017	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	May 03, 2017	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	May 03, 2017	28 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Clay	Brisbane	May 03, 2017	6 Day
- Method: LTM-GEN-7040			
Metals M8	Sydney	May 04, 2017	28 Day
- Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS			
Phenols (Halogenated)	Sydney	May 05, 2017	0 Day
Phenols (non-Halogenated)	Sydney	May 05, 2017	0 Day
Conductivity (1:5 aqueous extract at 25°C)	Melbourne	May 03, 2017	7 Day
- Method: LTM-INO-4030			
Ion Exchange Properties	Melbourne	May 03, 2017	
% Moisture	Sydney	Apr 28, 2017	14 Day
- Method: LTM-GEN-7080 Moisture			

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NATA # 1261 Site # 18217

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: MITCHELL STREET ENFIELD DSI
Project ID: 52680

Order No.:
Report #: 544088
Phone: 02 8245 0300
Fax:

Received: Apr 28, 2017 5:02 PM
Due: May 5, 2017
Priority: 5 Day
Contact Name: Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066
ABN: 50 005 085 521 Telephone: +61 2 9900 8400

Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271																	X	
ydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 18217																		
ternal Laboratory																		
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
	BH02_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23236								X		X	X		X
	BH04_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23237		X		X	X	X	X	X	X	X	X		X
	BH06_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23238	X							X		X	X	X	X
	BH07_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23239								X		X	X		X
	BH08_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23240								X		X	X		X
	BH09_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23241		X		X	X	X	X	X	X	X	X		X
	BH10_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23242		X		X	X	X	X	X	X	X	X		X
	QA120170428	Apr 28, 2017		Soil	S17-Ap23243								X		X	X		X
	RB20170428	Apr 28, 2017		Water	S17-Ap23244				X			X	X	X	X			X

Date Reported May 05, 2017

mgt

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:** **Phone:** **Fax:**	544088 02 8245 0300
Project Name:	MITCHELL STREET ENFIELD DSI		
Project ID:	52680		

Received:	Apr 28, 2017 5:02 PM
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Contact Name:	Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail					% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271																X	
ydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794					X												
erth Laboratory - NATA Site # 18217																	
	TB20170428	Apr 28, 2017		Water	S17-Ap23245									X			
	TS20170428	Apr 28, 2017		Water	S17-Ap23246									X			
	BH02_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23247		X										
	BH02_0.3-0.4	Apr 28, 2017		Soil	S17-Ap23248		X										
	BH02_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23249		X										
	BH04_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23250		X										
	BH04_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23251		X										
	BH06_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23252		X										
	BH06_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23253		X										
	BH06_1.1-1.2	Apr 28, 2017		Soil	S17-Ap23254		X										
	BH07_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23255		X										
	BH07_0.6-0.7	Apr 28, 2017		Soil	S17-Ap23256		X										

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elbourne Laboratory - NATA Site # 1254 & 14271																	X	
ydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 18217																		
	BH08_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23257			X										
	BH08_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23258			X										
	BH08_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23259			X										
	BH09_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23260			X										
	BH09_0.3-0.4	Apr 28, 2017		Soil	S17-Ap23261			X										
st Counts						1	3	15	4	3	3	4	9	4	11	8	1	9

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs 20-130%

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Phenols (Halogenated)							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2.4.5-Trichlorophenol	mg/kg	< 1			1	Pass	
2.4.6-Trichlorophenol	mg/kg	< 1			1.0	Pass	
2.6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1.0	Pass	
Pentachlorophenol	mg/kg	< 1			1.0	Pass	
Tetrachlorophenols - Total	mg/kg	< 1			1.0	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4.6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2.4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2.4-Dinitrophenol	mg/kg	< 5			5	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
% Clay	%	< 1			1	Pass	
Method Blank							
Ion Exchange Properties							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	111			70-130	Pass	
TRH C10-C14	%	109			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	114			70-130	Pass	
Toluene	%	118			70-130	Pass	
Ethylbenzene	%	120			70-130	Pass	
m&p-Xylenes	%	115			70-130	Pass	
o-Xylene	%	117			70-130	Pass	
Xylenes - Total	%	116			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Naphthalene	%	129			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	77			70-130	Pass	
Acenaphthylene	%	83			70-130	Pass	
Anthracene	%	93			70-130	Pass	
Benz(a)anthracene	%	88			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(g.h.i)perylene	%	83			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	89			70-130	Pass	
Dibenz(a.h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	86			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	83			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
Phenanthrene	%	89			70-130	Pass	
Pyrene	%	86			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	122			70-130	Pass	
4.4'-DDD	%	130			70-130	Pass	
4.4'-DDE	%	117			70-130	Pass	
a-BHC	%	120			70-130	Pass	
Aldrin	%	109			70-130	Pass	
b-BHC	%	119			70-130	Pass	
d-BHC	%	126			70-130	Pass	
Dieldrin	%	128			70-130	Pass	
Endosulfan I	%	121			70-130	Pass	
Endosulfan II	%	125			70-130	Pass	
Endosulfan sulphate	%	125			70-130	Pass	
Endrin	%	128			70-130	Pass	
Endrin aldehyde	%	116			70-130	Pass	
Endrin ketone	%	126			70-130	Pass	
g-BHC (Lindane)	%	115			70-130	Pass	
Heptachlor	%	126			70-130	Pass	
Heptachlor epoxide	%	78			70-130	Pass	
Hexachlorobenzene	%	125			70-130	Pass	
Methoxychlor	%	118			70-130	Pass	
Toxaphene	%	128			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Dimethoate	%	103			70-130	Pass	
Fenitrothion	%	105			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	81			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	82			30-130	Pass	
2.4-Dichlorophenol	%	87			30-130	Pass	
2.4.5-Trichlorophenol	%	90			30-130	Pass	
2.4.6-Trichlorophenol	%	88			30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.6-Dichlorophenol	%	85			30-130	Pass	
4-Chloro-3-methylphenol	%	77			30-130	Pass	
Pentachlorophenol	%	91			30-130	Pass	
Tetrachlorophenols - Total	%	96			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	103			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	104			30-130	Pass	
2-Methylphenol (o-Cresol)	%	87			30-130	Pass	
2-Nitrophenol	%	77			30-130	Pass	
2.4-Dimethylphenol	%	81			30-130	Pass	
2.4-Dinitrophenol	%	78			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	81			30-130	Pass	
4-Nitrophenol	%	95			30-130	Pass	
Dinoseb	%	82			30-130	Pass	
Phenol	%	79			30-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	100			70-130	Pass	
LCS - % Recovery							
% Clay	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	89			70-130	Pass	
Cadmium	%	84			70-130	Pass	
Chromium	%	86			70-130	Pass	
Copper	%	91			70-130	Pass	
Lead	%	102			70-130	Pass	
Mercury	%	104			70-130	Pass	
Nickel	%	87			70-130	Pass	
Zinc	%	81			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-My02563	NCP	%	72			70-130	Pass	
Cadmium	S17-My02563	NCP	%	76			70-130	Pass	
Chromium	S17-Ap23100	NCP	%	89			70-130	Pass	
Copper	S17-My02563	NCP	%	80			70-130	Pass	
Lead	S17-Ap23100	NCP	%	74			70-130	Pass	
Mercury	S17-Ap23100	NCP	%	93			70-130	Pass	
Nickel	S17-Ap23100	NCP	%	85			70-130	Pass	
Zinc	S17-My02563	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-My01083	NCP	%	82			70-130	Pass	
Acenaphthylene	S17-My01083	NCP	%	85			70-130	Pass	
Anthracene	S17-My01083	NCP	%	91			70-130	Pass	
Benz(a)anthracene	S17-My01083	NCP	%	85			70-130	Pass	
Benzo(a)pyrene	S17-My01083	NCP	%	77			70-130	Pass	
Benzo(b&j)fluoranthene	S17-Ma29656	NCP	%	65			70-130	Fail	Q08
Benzo(g.h.i)perylene	S17-My01083	NCP	%	87			70-130	Pass	
Benzo(k)fluoranthene	S17-My01083	NCP	%	80			70-130	Pass	
Chrysene	S17-My01083	NCP	%	85			70-130	Pass	
Dibenz(a.h)anthracene	S17-My01083	NCP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluoranthene	S17-My01083	NCP	%	78			70-130	Pass	
Fluorene	S17-My01083	NCP	%	91			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-My01083	NCP	%	87			70-130	Pass	
Naphthalene	S17-My01083	NCP	%	78			70-130	Pass	
Phenanthrene	S17-My01083	NCP	%	85			70-130	Pass	
Pyrene	S17-My01083	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S17-My00818	NCP	%	125			70-130	Pass	
4.4'-DDD	S17-My04095	NCP	%	128			70-130	Pass	
4.4'-DDE	S17-My00818	NCP	%	125			70-130	Pass	
4.4'-DDT	S17-My00818	NCP	%	87			70-130	Pass	
a-BHC	S17-My00818	NCP	%	119			70-130	Pass	
Aldrin	S17-My00818	NCP	%	113			70-130	Pass	
b-BHC	S17-My00818	NCP	%	100			70-130	Pass	
d-BHC	S17-My00818	NCP	%	117			70-130	Pass	
Dieldrin	S17-My00818	NCP	%	128			70-130	Pass	
Endosulfan I	S17-My00818	NCP	%	128			70-130	Pass	
Endosulfan II	S17-My00818	NCP	%	121			70-130	Pass	
Endosulfan sulphate	S17-My00818	NCP	%	119			70-130	Pass	
Endrin	S17-My00818	NCP	%	126			70-130	Pass	
Endrin aldehyde	S17-My00818	NCP	%	100			70-130	Pass	
Endrin ketone	S17-My00818	NCP	%	128			70-130	Pass	
g-BHC (Lindane)	S17-My00818	NCP	%	111			70-130	Pass	
Heptachlor	S17-My00818	NCP	%	114			70-130	Pass	
Heptachlor epoxide	S17-My00818	NCP	%	76			70-130	Pass	
Methoxychlor	S17-My00818	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Dimethoate	S17-Ap23041	NCP	%	103			70-130	Pass	
Fenitrothion	S17-Ap23041	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	S17-My04095	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S17-My02110	NCP	%	90			30-130	Pass	
2.4-Dichlorophenol	S17-My02110	NCP	%	95			30-130	Pass	
2.4.5-Trichlorophenol	S17-My02110	NCP	%	91			30-130	Pass	
2.4.6-Trichlorophenol	S17-My02110	NCP	%	93			30-130	Pass	
2.6-Dichlorophenol	S17-My02110	NCP	%	93			30-130	Pass	
4-Chloro-3-methylphenol	S17-My02110	NCP	%	91			30-130	Pass	
Pentachlorophenol	S17-My02110	NCP	%	83			30-130	Pass	
Tetrachlorophenols - Total	S17-My02110	NCP	%	94			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methylphenol (o-Cresol)	S17-My01083	NCP	%	74			30-130	Pass	
2-Nitrophenol	S17-My02110	NCP	%	87			30-130	Pass	
2.4-Dimethylphenol	S17-My01083	NCP	%	86			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S17-My02110	NCP	%	94			30-130	Pass	
4-Nitrophenol	S17-My02110	NCP	%	102			30-130	Pass	
Phenol	S17-My02110	NCP	%	88			30-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	S17-Ap23242	CP	%	108			70-130	Pass	
TRH C10-C14	S17-Ap23242	CP	%	96			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Ap23242	CP	%	102			70-130	Pass	
Toluene	S17-Ap23242	CP	%	104			70-130	Pass	
Ethylbenzene	S17-Ap23242	CP	%	107			70-130	Pass	
m&p-Xylenes	S17-Ap23242	CP	%	103			70-130	Pass	
o-Xylene	S17-Ap23242	CP	%	103			70-130	Pass	
Xylenes - Total	S17-Ap23242	CP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Ap23242	CP	%	100			70-130	Pass	
TRH C6-C10	S17-Ap23242	CP	%	108			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-Ap23242	CP	%	88			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S17-Ap22218	NCP	%	13	12	5.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Ap23083	NCP	mg/kg	13	11	14	30%	Pass	
Cadmium	S17-Ap23083	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S17-Ap23083	NCP	mg/kg	10	11	6.0	30%	Pass	
Copper	S17-Ap23083	NCP	mg/kg	20	17	15	30%	Pass	
Lead	S17-Ap23083	NCP	mg/kg	14	14	1.0	30%	Pass	
Mercury	S17-Ap23083	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S17-Ap23039	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Zinc	S17-Ap23083	NCP	mg/kg	35	32	9.0	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S17-My01081	NCP	mg/kg	0.7	< 0.5	35	30%	Fail	Q15
Benz(a)anthracene	S17-My01081	NCP	mg/kg	1.1	0.7	41	30%	Fail	Q15
Benzo(a)pyrene	S17-My01081	NCP	mg/kg	1.0	0.6	43	30%	Fail	Q15
Benzo(b&j)fluoranthene	S17-My01081	NCP	mg/kg	0.6	< 0.5	25	30%	Pass	
Benzo(g.h.i)perylene	S17-My01081	NCP	mg/kg	0.6	< 0.5	46	30%	Fail	Q15
Benzo(k)fluoranthene	S17-My01081	NCP	mg/kg	0.8	< 0.5	53	30%	Fail	Q15
Chrysene	S17-My01081	NCP	mg/kg	1.1	0.7	46	30%	Fail	Q15
Dibenz(a.h)anthracene	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S17-My01081	NCP	mg/kg	2.7	1.7	46	30%	Fail	Q15
Fluorene	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S17-My01081	NCP	mg/kg	1.2	1.3	6.0	30%	Pass	
Phenanthrene	S17-My01081	NCP	mg/kg	2.5	1.6	45	30%	Fail	Q15
Pyrene	S17-My01081	NCP	mg/kg	2.7	1.7	47	30%	Fail	Q15

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S17-My00817	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S17-My00817	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S17-My00817	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Toxaphene	S17-My00817	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S17-Ap23237	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S17-Ap23237	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Omethoate	S17-Ap23237	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Tokuthion	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S17-Ap23237	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S17-My00817	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1221	S17-My00817	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S17-My00817	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S17-My00817	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S17-My00817	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S17-My00817	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S17-My00817	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	S17-My01081	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	S17-My01081	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	S17-My01081	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	S17-My01081	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	S17-My01081	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S17-My01081	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S17-My01081	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S17-My01081	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
2-Nitrophenol	S17-My01081	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	S17-My01081	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	S17-My01081	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	S17-My01081	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	S17-My01081	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	S17-My01081	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Clay	S17-Ap23238	CP	%	8.8	11	25	30%	Pass	
Conductivity (1:5 aqueous extract at 25°C)	M17-My02063	NCP	uS/cm	210	200	2.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Ap23241	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S17-Ap23241	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S17-Ap23241	CP	mg/kg	54	50	8.0	30%	Pass	
TRH C29-C36	S17-Ap23241	CP	mg/kg	94	86	10	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Ap23241	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S17-Ap23241	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S17-Ap23241	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S17-Ap23241	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S17-Ap23241	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S17-Ap23241	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Ap23241	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S17-Ap23241	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S17-Ap23241	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S17-Ap23241	CP	mg/kg	120	110	10	30%	Pass	
TRH >C34-C40	S17-Ap23241	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins | mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
R16	The LORs have been raised due to the high concentration of one or more analytes

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)
Ryan Hamilton	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Seth Molinari**

Report **544088-W**
Project name MITCHELL STREET ENFIELD DSI
Project ID 52680
Received Date Apr 28, 2017

Client Sample ID			**RB20170428**	**TB20170428**	**TS20170428**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Ap23244**	**S17-Ap23245**	**S17-Ap23246**
Date Sampled			**Apr 28, 2017**	**Apr 28, 2017**	**Apr 28, 2017**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	< 0.02	-	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	95%
Toluene	0.001	mg/L	< 0.001	< 0.001	88%
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	87%
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	90%
o-Xylene	0.001	mg/L	< 0.001	< 0.001	87%
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	89%
4-Bromofluorobenzene (surr.)	1	%	74	80	96
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	< 0.01	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	-	-
TRH C6-C10	0.02	mg/L	< 0.02	-	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	-	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-
Anthracene	0.001	mg/L	< 0.001	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-
Chrysene	0.001	mg/L	< 0.001	-	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-
Fluorene	0.001	mg/L	< 0.001	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-
Phenanthrene	0.001	mg/L	< 0.001	-	-
Pyrene	0.001	mg/L	< 0.001	-	-

Client Sample ID			RB20170428	TB20170428	TS20170428
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S17-Ap23244	S17-Ap23245	S17-Ap23246
Date Sampled			Apr 28, 2017	Apr 28, 2017	Apr 28, 2017
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Total PAH*	0.001	mg/L	< 0.001	-	-
2-Fluorobiphenyl (surr.)	1	%	51	-	-
p-Terphenyl-d14 (surr.)	1	%	98	-	-
Polychlorinated Biphenyls					
Aroclor-1016	0.005	mg/L	< 0.005	-	-
Aroclor-1221	0.001	mg/L	< 0.001	-	-
Aroclor-1232	0.005	mg/L	< 0.005	-	-
Aroclor-1242	0.005	mg/L	< 0.005	-	-
Aroclor-1248	0.005	mg/L	< 0.005	-	-
Aroclor-1254	0.005	mg/L	< 0.005	-	-
Aroclor-1260	0.005	mg/L	< 0.005	-	-
Total PCB*	0.001	mg/L	< 0.001	-	-
Dibutylchlorendate (surr.)	1	%	INT	-	-
Tetrachloro-m-xylene (surr.)	1	%		-	-
Phenols (Halogenated)					
2-Chlorophenol	0.003	mg/L	< 0.003	-	-
2.4-Dichlorophenol	0.001	mg/L	< 0.001	-	-
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	-	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	-	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	-	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	-	-
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	-	-
Total Halogenated Phenol*	0.01	mg/L	< 0.01	-	-
Phenols (non-Halogenated)					
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	-	-
2-Methyl-4.6-dinitrophenol	0.005	mg/L	< 0.005	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	-	-
2-Nitrophenol	0.005	mg/L	< 0.005	-	-
2.4-Dimethylphenol	0.001	mg/L	< 0.001	-	-
2.4-Dinitrophenol	0.001	mg/L	< 0.001	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	-	-
4-Nitrophenol	0.001	mg/L	< 0.001	-	-
Dinoseb	0.1	mg/L	< 0.1	-	-
Phenol	0.003	mg/L	< 0.003	-	-
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	-	-
Phenol-d6 (surr.)	1	%	INT	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	0.05	mg/L	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-
Heavy Metals					
Arsenic	0.001	mg/L	< 0.001	-	-
Cadmium	0.0002	mg/L	< 0.0002	-	-
Chromium	0.001	mg/L	< 0.001	-	-
Copper	0.001	mg/L	0.002	-	-
Lead	0.001	mg/L	< 0.001	-	-
Mercury	0.0001	mg/L	< 0.0001	-	-
Nickel	0.001	mg/L	< 0.001	-	-
Zinc	0.005	mg/L	< 0.005	-	-

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	May 01, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Apr 28, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 01, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	Apr 28, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	May 01, 2017	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Polychlorinated Biphenyls	Sydney	May 01, 2017	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	May 03, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Phenols (Halogenated)	Sydney	May 05, 2017	0 Day
Phenols (non-Halogenated)	Sydney	May 05, 2017	0 Day

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Company Name: JBS & G Australia (NSW) P/L
Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: MITCHELL STREET ENFIELD DSI
Project ID: 52680

Order No.:
Report #: 544088
Phone: 02 8245 0300
Fax:

Received: Apr 28, 2017 5:02 PM
Due: May 5, 2017
Priority: 5 Day
Contact Name: Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066
ABN: 50 005 085 521 Telephone: +61 2 9900 8400

Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271																	X	
ydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 18217																		
ternal Laboratory																		
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**													
	BH02_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23236								X		X	X		X
	BH04_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23237		X		X	X	X	X	X	X	X	X		X
	BH06_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23238	X							X		X	X	X	X
	BH07_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23239								X		X	X		X
	BH08_0.2-0.3	Apr 28, 2017		Soil	S17-Ap23240								X		X	X		X
	BH09_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23241		X		X	X	X	X	X	X	X	X		X
	BH10_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23242		X		X	X	X	X	X	X	X	X		X
	QA120170428	Apr 28, 2017		Soil	S17-Ap23243								X		X	X		X
	RB20170428	Apr 28, 2017		Water	S17-Ap23244				X			X	X	X	X			X

Date Reported May 05, 2017

mgt

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:** **Phone:** **Fax:**	544088 02 8245 0300
Project Name:	MITCHELL STREET ENFIELD DSI		
Project ID:	52680		

Received:	Apr 28, 2017 5:02 PM
Due:	May 5, 2017
Priority:	5 Day
Contact Name:	Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail					% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271																X	
ydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794					X												
erth Laboratory - NATA Site # 18217																	
	TB20170428	Apr 28, 2017		Water	S17-Ap23245									X			
	TS20170428	Apr 28, 2017		Water	S17-Ap23246									X			
	BH02_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23247		X										
	BH02_0.3-0.4	Apr 28, 2017		Soil	S17-Ap23248		X										
	BH02_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23249		X										
	BH04_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23250		X										
	BH04_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23251		X										
	BH06_0.1-0.2	Apr 28, 2017		Soil	S17-Ap23252		X										
	BH06_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23253		X										
	BH06_1.1-1.2	Apr 28, 2017		Soil	S17-Ap23254		X										
	BH07_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23255		X										
	BH07_0.6-0.7	Apr 28, 2017		Soil	S17-Ap23256		X										

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Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	Phenols (IWRG 621)	BTEX	Moisture Set	Cation Exchange Capacity	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271																	X	
ydney Laboratory - NATA Site # 18217							X	X	X	X	X	X	X	X	X	X	X	X
isbane Laboratory - NATA Site # 20794						X												
erth Laboratory - NATA Site # 18217																		
	BH08_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23257			X										
	BH08_0.4-0.5	Apr 28, 2017		Soil	S17-Ap23258			X										
	BH08_0.9-1.0	Apr 28, 2017		Soil	S17-Ap23259			X										
	BH09_0.0-0.1	Apr 28, 2017		Soil	S17-Ap23260			X										
	BH09_0.3-0.4	Apr 28, 2017		Soil	S17-Ap23261			X										
st Counts						1	3	15	4	3	3	4	9	4	11	8	1	9

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. This report replaces any interim results previously issued.

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs 20-130%

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.001			0.001	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.005			0.005	Pass	
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	95			70-130	Pass	
TRH C10-C14	%	83			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	90			70-130	Pass	
Ethylbenzene	%	91			70-130	Pass	
m&p-Xylenes	%	94			70-130	Pass	
o-Xylene	%	93			70-130	Pass	
Xylenes - Total	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	88			70-130	Pass	
TRH C6-C10	%	92			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	81			70-130	Pass	
Acenaphthylene	%	78			70-130	Pass	
Anthracene	%	86			70-130	Pass	
Benz(a)anthracene	%	90			70-130	Pass	
Benzo(a)pyrene	%	93			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(b&j)fluoranthene	%	77			70-130	Pass	
Benzo(g.h.i)perylene	%	80			70-130	Pass	
Benzo(k)fluoranthene	%	80			70-130	Pass	
Chrysene	%	93			70-130	Pass	
Dibenz(a.h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	84			70-130	Pass	
Fluorene	%	80			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	82			70-130	Pass	
Naphthalene	%	84			70-130	Pass	
Phenanthrene	%	90			70-130	Pass	
Pyrene	%	85			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	107			30-130	Pass	
2.4-Dichlorophenol	%	118			30-130	Pass	
2.4.5-Trichlorophenol	%	51			30-130	Pass	
2.4.6-Trichlorophenol	%	50			30-130	Pass	
2.6-Dichlorophenol	%	112			30-130	Pass	
4-Chloro-3-methylphenol	%	47			30-130	Pass	
Pentachlorophenol	%	46			30-130	Pass	
Tetrachlorophenols - Total	%	48			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	50			30-130	Pass	
2-Methyl-4.6-dinitrophenol	%	31			30-130	Pass	
2-Methylphenol (o-Cresol)	%	91			30-130	Pass	
2-Nitrophenol	%	62			30-130	Pass	
2.4-Dimethylphenol	%	103			30-130	Pass	
2.4-Dinitrophenol	%	32			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	78			30-130	Pass	
4-Nitrophenol	%	32			30-130	Pass	
Dinoseb	%	54			30-130	Pass	
Phenol	%	35			30-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	95			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	86			70-130	Pass	
Cadmium	%	86			70-130	Pass	
Chromium	%	83			70-130	Pass	
Copper	%	86			70-130	Pass	
Lead	%	98			70-130	Pass	
Mercury	%	92			70-130	Pass	
Nickel	%	85			70-130	Pass	
Zinc	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-Ap23244	CP	%	98			70-130	Pass	
TRH C10-C14	S17-Ap22581	NCP	%	116			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Ap23244	CP	%	98			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S17-Ap23244	CP	%	92			70-130	Pass	
Ethylbenzene	S17-Ap23244	CP	%	96			70-130	Pass	
m&p-Xylenes	S17-Ap23244	CP	%	97			70-130	Pass	
o-Xylene	S17-Ap23244	CP	%	98			70-130	Pass	
Xylenes - Total	S17-Ap23244	CP	%	97			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Ap23244	CP	%	90			70-130	Pass	
TRH C6-C10	S17-Ap23244	CP	%	95			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-Ap23147	NCP	%	77			70-130	Pass	
Anthracene	S17-Ap23147	NCP	%	77			70-130	Pass	
Benz(a)anthracene	S17-Ap23147	NCP	%	82			70-130	Pass	
Benzo(a)pyrene	S17-Ap23147	NCP	%	82			70-130	Pass	
Benzo(g.h.i)perylene	S17-Ap23147	NCP	%	72			70-130	Pass	
Benzo(k)fluoranthene	S17-Ap23147	NCP	%	72			70-130	Pass	
Chrysene	S17-Ap23147	NCP	%	84			70-130	Pass	
Dibenz(a.h)anthracene	S17-Ap23147	NCP	%	72			70-130	Pass	
Fluoranthene	S17-Ap23147	NCP	%	83			70-130	Pass	
Fluorene	S17-Ap23147	NCP	%	76			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-Ap23147	NCP	%	72			70-130	Pass	
Naphthalene	S17-Ap23147	NCP	%	80			70-130	Pass	
Phenanthrene	S17-Ap23147	NCP	%	82			70-130	Pass	
Pyrene	S17-Ap23147	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	S17-Ap23147	NCP	%	71			30-130	Pass	
2.4-Dichlorophenol	S17-Ap23147	NCP	%	69			30-130	Pass	
2.6-Dichlorophenol	S17-Ap23147	NCP	%	53			30-130	Pass	
4-Chloro-3-methylphenol	S17-Ap23147	NCP	%	32			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Methylphenol (o-Cresol)	S17-Ap23147	NCP	%	64			30-130	Pass	
2-Nitrophenol	S17-Ap23147	NCP	%	40			30-130	Pass	
2.4-Dimethylphenol	S17-Ap23147	NCP	%	74			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S17-Ap23147	NCP	%	56			30-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-Ap22581	NCP	%	125			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-Ap21184	NCP	%	88			70-130	Pass	
Cadmium	S17-Ap21184	NCP	%	89			70-130	Pass	
Chromium	S17-Ap21184	NCP	%	83			70-130	Pass	
Copper	S17-Ap21184	NCP	%	79			70-130	Pass	
Lead	S17-Ap21184	NCP	%	94			70-130	Pass	
Mercury	S17-Ap21184	NCP	%	88			70-130	Pass	
Nickel	S17-Ap21184	NCP	%	79			70-130	Pass	
Zinc	S17-Ap21184	NCP	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Ap23185	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S17-Ap22579	NCP	mg/L	4.1	4.0	4.0	30%	Pass	
TRH C15-C28	S17-Ap22579	NCP	mg/L	1.6	1.5	9.0	30%	Pass	
TRH C29-C36	S17-Ap22579	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Ap23185	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Ap23185	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Ap23185	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Ap23185	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Ap23185	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Ap23185	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Ap23185	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Ap23185	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	S17-Ap23146	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2.4-Dichlorophenol	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.4.5-Trichlorophenol	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.4.6-Trichlorophenol	S17-Ap23146	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
2.6-Dichlorophenol	S17-Ap23146	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
4-Chloro-3-methylphenol	S17-Ap23146	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Pentachlorophenol	S17-Ap23146	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Tetrachlorophenols - Total	S17-Ap23146	NCP	mg/L	< 0.03	< 0.03	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	S17-Ap23146	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	S17-Ap23146	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2-Methylphenol (o-Cresol)	S17-Ap23146	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
2-Nitrophenol	S17-Ap23146	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
2.4-Dimethylphenol	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2.4-Dinitrophenol	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
3&4-Methylphenol (m&p-Cresol)	S17-Ap23146	NCP	mg/L	< 0.006	< 0.006	<1	30%	Pass	
4-Nitrophenol	S17-Ap23146	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dinoseb	S17-Ap23146	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Phenol	S17-Ap23146	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S17-Ap22579	NCP	mg/L	2.9	2.7	5.0	30%	Pass	
TRH >C16-C34	S17-Ap22579	NCP	mg/L	1.3	1.3	2.0	30%	Pass	
TRH >C34-C40	S17-Ap22579	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Ap18983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S17-Ap21287	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S17-Ap21287	NCP	mg/L	0.006	0.007	3.0	30%	Pass	
Copper	S17-Ma25699	NCP	mg/L	0.001	0.001	18	30%	Pass	
Lead	S17-Ap22912	NCP	mg/L	0.002	0.001	18	30%	Pass	
Mercury	S17-Ap18983	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S17-Ap21287	NCP	mg/L	0.003	0.002	2.0	30%	Pass	
Zinc	M17-Ap18070	NCP	mg/L	0.008	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

012473

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 52680
PROJECT NAME: Enfield DD
DATE NEEDED BY: Std TAT

LABORATORY BATCH NO.:
SAMPLERS: NWells
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) S Molinari @jbsg.com.au; (3) N.Wells @jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

546369

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	Heavy metals	TRH	BTEX	PAH	Phenols	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
MW01-01	Water	16/5		bottles + HCl + Ice		X	X	X	X	X			
MW02-01	↓	↓		↓		X	X	X	X	X			
MW03-01						X	X	X	X	X			
MW04-01						X	X	X	X	X			
TB20170516								X					
TS20170516								X					

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: NWells DATE: 16/5/2016	CONSIGNMENT NOTE NO.	NAME: Ninad Tamb	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 16/5/17 17:29	
		OF: EA/MGT	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

546369

Enviro Sample NSW

From: Nicola Wells <NWells@jbsg.com.au>
Sent: Wednesday, 17 May 2017 9:49 AM
To: Seth Molinari; Enviro Sample NSW
Subject: RE: Eurofins mgt Sample Receipt Advice - Report 546369 : Site ENFIELD DD (52680)

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Vinod,

Could we please schedule sample QA1 for the same analysis as other samples (heavy metals,trh,btex,pah and phenols).

Kind Regards

Nicola

Sent from my Sony Xperia™ smartphone

---- EnviroSampleNSW@eurofins.com wrote ----

Dear Valued Client,

Extra sample received: QA1, logged on hold

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Analytical Services Manager as soon as possible to make certain that they get changed.

Regards

Vinod Jacob
Sample Receipt

17/5 VL

Eurofins | mgt
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone: +61 29900 8492
Email: EnviroSampleNSW@eurofins.com
Website:environment.eurofins.com.au

EnviroNote 1071 - QSM 5.1
EnviroNote 1069 - Eurofins Overnight TAT

eurofins | mgt

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 18217

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Seth Molinari
Project name:	ENFIELD DD
Project ID:	52680
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	May 16, 2017 5:29 PM
Eurofins | mgt reference:	**546369**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 12.5 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Extra sample received: QA1, logged on hold.

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Seth Molinari - SMolinari@jbsg.com.au.

Sydney
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16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1254
Site# 12

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	546369
		Phone:	02 8245 0300
		Fax:	
Project Name:	ENFIELD DD		
Project ID:	52680		

Received:	May 16, 2017 5:29 PM
Due:	May 23, 2017
Priority:	5 Day
Contact Name:	Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Phenols (IWRG 621)	BTEX	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271										
ydney Laboratory - NATA Site # 18217						X	X	X	X	X
isbane Laboratory - NATA Site # 20794										
erth Laboratory - NATA Site # 18217										
cternal Laboratory										
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
	MW01-01	May 16, 2017		Water	S17-My15744	X	X	X	X	X
	MW02-01	May 16, 2017		Water	S17-My15745	X	X	X	X	X
	MW03-01	May 16, 2017		Water	S17-My15746	X	X	X	X	X
	MW04-01	May 16, 2017		Water	S17-My15747	X	X	X	X	X
	TB20170516	May 16, 2017		Water	S17-My15748				X	
	TS20170516	May 16, 2017		Water	S17-My15749				X	
	QA1	May 16, 2017		Water	S17-My15754	X	X	X	X	X
est Counts						5	5	5	7	5

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Seth Molinari**

Report **546369-W**
Project name ENFIELD DD
Project ID 52680
Received Date May 16, 2017

Client Sample ID			**MW01-01**	**MW02-01**	**MW03-01**	**MW04-01**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-My15744**	**S17-My15745**	**S17-My15746**	**S17-My15747**
Date Sampled			**May 16, 2017**	**May 16, 2017**	**May 16, 2017**	**May 16, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	0.05	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	0.9	0.5
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	1.1	0.5
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	2	1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	99	98	106	102
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	0.05	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	0.05	< 0.02
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			MW01-01	MW02-01	MW03-01	MW04-01
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-My15744	S17-My15745	S17-My15746	S17-My15747
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	78	57	71	72
p-Terphenyl-d14 (surr.)	1	%	64	70	65	69
Phenols (Halogenated)						
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03	< 0.03	< 0.03	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Phenols (non-Halogenated)						
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
2-Methyl-4.6-dinitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
2-Nitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2.4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	< 0.006
4-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dinoseb	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
Phenol-d6 (surr.)	1	%	INT	INT	INT	INT
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	2.3	1.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	0.1	< 0.1
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.01	< 0.01	0.013	< 0.01
Cadmium (filtered)	0.0002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chromium (filtered)	0.001	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Copper (filtered)	0.001	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Lead (filtered)	0.001	mg/L	0.010	< 0.01	< 0.01	< 0.01
Mercury (filtered)	0.0001	mg/L	0.0008	< 0.001	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
Zinc (filtered)	0.005	mg/L	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TB20170516	TS20170516	QA1
Sample Matrix			Water	Water	Water
Eurofins | mgt Sample No.			S17-My15748	S17-My15749	S17-My15754
Date Sampled			May 16, 2017	May 16, 2017	May 16, 2017
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	0.02	mg/L	-	-	< 0.02
TRH C10-C14	0.05	mg/L	-	-	< 0.05
TRH C15-C28	0.1	mg/L	-	-	0.2
TRH C29-C36	0.1	mg/L	-	-	0.2
TRH C10-36 (Total)	0.1	mg/L	-	-	0.4
BTEX					
Benzene	0.001	mg/L	< 0.001	102%	< 0.001
Toluene	0.001	mg/L	< 0.001	88%	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	83%	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	90%	< 0.002
o-Xylene	0.001	mg/L	< 0.001	95%	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	92%	< 0.003
4-Bromofluorobenzene (surr.)	1	%	97	106	100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	-	-	< 0.05
TRH C6-C10	0.02	mg/L	-	-	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	< 0.02
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	-	-	< 0.001
Acenaphthylene	0.001	mg/L	-	-	< 0.001
Anthracene	0.001	mg/L	-	-	< 0.001
Benz(a)anthracene	0.001	mg/L	-	-	< 0.001
Benzo(a)pyrene	0.001	mg/L	-	-	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	-	-	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	-	-	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	-	-	< 0.001
Chrysene	0.001	mg/L	-	-	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	-	-	< 0.001
Fluoranthene	0.001	mg/L	-	-	< 0.001
Fluorene	0.001	mg/L	-	-	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	-	-	< 0.001
Naphthalene	0.001	mg/L	-	-	< 0.001
Phenanthrene	0.001	mg/L	-	-	< 0.001
Pyrene	0.001	mg/L	-	-	< 0.001
Total PAH*	0.001	mg/L	-	-	< 0.001
2-Fluorobiphenyl (surr.)	1	%	-	-	51
p-Terphenyl-d14 (surr.)	1	%	-	-	53
Phenols (Halogenated)					
2-Chlorophenol	0.003	mg/L	-	-	< 0.003
2.4-Dichlorophenol	0.001	mg/L	-	-	< 0.001
2.4.5-Trichlorophenol	0.001	mg/L	-	-	< 0.001
2.4.6-Trichlorophenol	0.01	mg/L	-	-	< 0.01
2.6-Dichlorophenol	0.003	mg/L	-	-	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	-	-	< 0.01
Pentachlorophenol	0.01	mg/L	-	-	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	-	-	< 0.03
Total Halogenated Phenol*	0.01	mg/L	-	-	< 0.01

Client Sample ID			TB20170516	TS20170516	QA1
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-My15748**	**S17-My15749**	**S17-My15754**
Date Sampled			**May 16, 2017**	**May 16, 2017**	**May 16, 2017**
Test/Reference	LOR	Unit			
Phenols (non-Halogenated)					
2-Cyclohexyl-4.6-dinitrophenol	0.1	mg/L	-	-	< 0.1
2-Methyl-4.6-dinitrophenol	0.005	mg/L	-	-	< 0.005
2-Methylphenol (o-Cresol)	0.003	mg/L	-	-	< 0.003
2-Nitrophenol	0.005	mg/L	-	-	< 0.005
2.4-Dimethylphenol	0.001	mg/L	-	-	< 0.001
2.4-Dinitrophenol	0.001	mg/L	-	-	< 0.001
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	-	-	< 0.006
4-Nitrophenol	0.001	mg/L	-	-	< 0.001
Dinoseb	0.1	mg/L	-	-	< 0.1
Phenol	0.003	mg/L	-	-	< 0.003
Total Non-Halogenated Phenol*	0.1	mg/L	-	-	< 0.1
Phenol-d6 (surr.)	1	%	-	-	INT
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	0.05	mg/L	-	-	< 0.05
TRH >C16-C34	0.1	mg/L	-	-	0.5
TRH >C34-C40	0.1	mg/L	-	-	< 0.1
Heavy Metals					
Arsenic (filtered)	0.001	mg/L	-	-	0.002
Cadmium (filtered)	0.0002	mg/L	-	-	< 0.0002
Chromium (filtered)	0.001	mg/L	-	-	< 0.001
Copper (filtered)	0.001	mg/L	-	-	< 0.001
Lead (filtered)	0.001	mg/L	-	-	< 0.001
Mercury (filtered)	0.0001	mg/L	-	-	< 0.0001
Nickel (filtered)	0.001	mg/L	-	-	0.007
Zinc (filtered)	0.005	mg/L	-	-	< 0.005

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	May 22, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 17, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	May 22, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	May 17, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Sydney	May 22, 2017	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Metals M8 filtered	Sydney	May 17, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Phenols (Halogenated)	Sydney	May 22, 2017	0 Day
Phenols (non-Halogenated)	Sydney	May 22, 2017	0 Day

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1254
Site# 1427

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	546369
		Phone:	02 8245 0300
		Fax:	
Project Name:	ENFIELD DD		
Project ID:	52680		

Received:	May 16, 2017 5:29 PM
Due:	May 23, 2017
Priority:	5 Day
Contact Name:	Seth Molinari

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	Phenols (IWRG 621)	BTEX	Total Recoverable Hydrocarbons
elbourne Laboratory - NATA Site # 1254 & 14271										
ydney Laboratory - NATA Site # 18217						X	X	X	X	X
isbane Laboratory - NATA Site # 20794										
erth Laboratory - NATA Site # 18217										
cternal Laboratory										
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
	MW01-01	May 16, 2017		Water	S17-My15744	X	X	X	X	X
	MW02-01	May 16, 2017		Water	S17-My15745	X	X	X	X	X
	MW03-01	May 16, 2017		Water	S17-My15746	X	X	X	X	X
	MW04-01	May 16, 2017		Water	S17-My15747	X	X	X	X	X
	TB20170516	May 16, 2017		Water	S17-My15748				X	
	TS20170516	May 16, 2017		Water	S17-My15749				X	
	QA1	May 16, 2017		Water	S17-My15754	X	X	X	X	X
st Counts						5	5	5	7	5

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066
ABN : 50 005 085 521 Telephone : +61 2 9900 8400

Date Reported:May 23, 2017

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs 20-130%

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4.6-dinitrophenol	mg/L	< 0.005			0.005	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Nitrophenol	mg/L	< 0.005			0.005	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	92			70-130	Pass	
TRH C10-C14	%	125			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	107			70-130	Pass	
Ethylbenzene	%	104			70-130	Pass	
m&p-Xylenes	%	116			70-130	Pass	
o-Xylene	%	112			70-130	Pass	
Xylenes - Total	%	115			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	89			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	79			70-130	Pass	
Acenaphthylene	%	91			70-130	Pass	
Anthracene	%	80			70-130	Pass	
Benz(a)anthracene	%	95			70-130	Pass	
Benzo(a)pyrene	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	%	99			70-130	Pass	
Benzo(g.h.i)perylene	%	80			70-130	Pass	
Benzo(k)fluoranthene	%	96			70-130	Pass	
Chrysene	%	87			70-130	Pass	
Dibenz(a.h)anthracene	%	82			70-130	Pass	
Fluoranthene	%	84			70-130	Pass	
Fluorene	%	84			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	77			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
Phenanthrene	%	84			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pyrene	%	83			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	73			30-130	Pass	
2.4-Dichlorophenol	%	75			30-130	Pass	
2.4.5-Trichlorophenol	%	39			30-130	Pass	
2.4.6-Trichlorophenol	%	37			30-130	Pass	
2.6-Dichlorophenol	%	80			30-130	Pass	
4-Chloro-3-methylphenol	%	35			30-130	Pass	
Pentachlorophenol	%	38			30-130	Pass	
Tetrachlorophenols - Total	%	33			30-130	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	32			30-130	Pass	
2-Methylphenol (o-Cresol)	%	66			30-130	Pass	
2-Nitrophenol	%	43			30-130	Pass	
2.4-Dimethylphenol	%	73			30-130	Pass	
2.4-Dinitrophenol	%	110			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	%	52			30-130	Pass	
Dinoseb	%	38			30-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	128			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	112			70-130	Pass	
Cadmium (filtered)	%	116			70-130	Pass	
Chromium (filtered)	%	113			70-130	Pass	
Copper (filtered)	%	118			70-130	Pass	
Lead (filtered)	%	110			70-130	Pass	
Mercury (filtered)	%	125			70-130	Pass	
Nickel (filtered)	%	114			70-130	Pass	
Zinc (filtered)	%	114			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	P17-My09956	NCP	%	126			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	P17-My09956	NCP	%	103			70-130	Pass	
Toluene	P17-My09956	NCP	%	95			70-130	Pass	
Ethylbenzene	P17-My09956	NCP	%	89			70-130	Pass	
m&p-Xylenes	P17-My09956	NCP	%	99			70-130	Pass	
o-Xylene	P17-My09956	NCP	%	100			70-130	Pass	
Xylenes - Total	P17-My09956	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	P17-My09956	NCP	%	93			70-130	Pass	
TRH C6-C10	P17-My09956	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-My09065	NCP	%	71			70-130	Pass	
Acenaphthylene	S17-My09065	NCP	%	124			70-130	Pass	
Benz(a)anthracene	S17-My09065	NCP	%	82			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	S17-My09065	NCP	%	77			70-130	Pass	
Benzo(b&j)fluoranthene	S17-My09065	NCP	%	101			70-130	Pass	
Benzo(k)fluoranthene	S17-My09065	NCP	%	93			70-130	Pass	
Chrysene	S17-My09065	NCP	%	82			70-130	Pass	
Fluoranthene	S17-My09065	NCP	%	74			70-130	Pass	
Fluorene	S17-My09065	NCP	%	76			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-My09065	NCP	%	70			70-130	Pass	
Naphthalene	S17-My09065	NCP	%	72			70-130	Pass	
Phenanthrene	S17-My09065	NCP	%	70			70-130	Pass	
Pyrene	S17-My09065	NCP	%	72			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S17-My15745	CP	%	122			70-130	Pass	
Cadmium (filtered)	S17-My15745	CP	%	121			70-130	Pass	
Chromium (filtered)	S17-My15745	CP	%	117			70-130	Pass	
Copper (filtered)	S17-My15745	CP	%	109			70-130	Pass	
Lead (filtered)	S17-My15745	CP	%	115			70-130	Pass	
Mercury (filtered)	S17-My15745	CP	%	91			70-130	Pass	
Nickel (filtered)	S17-My15745	CP	%	110			70-130	Pass	
Zinc (filtered)	S17-My15745	CP	%	110			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-My11859	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-My11859	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-My11859	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-My11859	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-My11859	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-My11859	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-My11859	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-My11859	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-My11859	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S17-My09064	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M17-Fe25409	NCP	mg/L	0.010	0.055	91	30%	Fail	Q15
Chromium (filtered)	S17-My16155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	S17-My16155	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Lead (filtered)	S17-My16155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

548018

COC NSW

From: Nibha Vaidya
Sent: Monday, 29 May 2017 11:23 AM
To: Enviro Sample NSW; COC NSW; Rupan Virk
Subject: RE: 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 544088 : Site MITCHELL STREET ENFIELD DSI (52680)

Sorry report 546369, not 543661

Kind Regards,

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

From: Nibha Vaidya
Sent: Monday, 29 May 2017 11:14 AM
To: Enviro Sample NSW; COC NSW; Rupan Virk
Subject: 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 544088 : Site MITCHELL STREET ENFIELD DSI (52680)

Retest without dilutions please – 1 day TAT

Report 544088 - Ap23238 for BTEX and volatile TRH
Report 543661 - My15744, My15745, My15746 and My15747 for M8 filtered

Kind Regards,

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

From: Nicola Wells [mailto:NWells@jbsg.com.au]
Sent: Monday, 29 May 2017 10:27 AM
To: Nibha Vaidya
Cc: Seth Molinari
Subject: RE: Eurofins | mgt Test Results - Report 544088 : Site MITCHELL STREET ENFIELD DSI (52680)

Hi Nibha,

In reviewing the results I've found that the LOR on sample BH06_0.2-0.3 has been raised for a range of analysis (selected TRH, BTEX, naphthalene). This has meant that we do not have actual concentrations of these analytes as they are reported as below the raised LOR.

Are you able to re run this sample so that we have reported concentrations of the analytes?

Could you also please also explain the process of raising the LOR and why the sample wasn't re run initially?

29/5 UL

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 18217

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Nicola Wells
Project name: ADDITIONAL - ENFIELD DD
Project ID: 52680
COC number: Not provided
Turn around time: 1 Day
Date/Time received: May 29, 2017 11:23 AM
Eurofins | mgt reference: **548010**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 15.6 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☑ Sample containers for volatile analysis received with zero headspace.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Retest without dilutions

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Nicola Wells - NWells@jbsg.com.au.

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1254
Site# 12

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	548010
		Phone:	02 8245 0300
		Fax:	
Project Name:	ADDITIONAL - ENFIELD DD		
Project ID:	52680		

Received:	May 29, 2017 11:23 AM
Due:	May 30, 2017
Priority:	1 Day
Contact Name:	Nicola Wells

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Metals M8 filtered
elbourne Laboratory - NATA Site # 1254 & 14271						
ydney Laboratory - NATA Site # 18217						X
isbane Laboratory - NATA Site # 20794						
erth Laboratory - NATA Site # 18217						
ternal Laboratory						
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
	MW01-01	Apr 28, 2017		Water	S17-My28380	X
	MW02-01	Apr 28, 2017		Water	S17-My28381	X
	MW03-01	Apr 28, 2017		Water	S17-My28382	X
	MW04-01	Apr 28, 2017		Water	S17-My28383	X
st Counts						4

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Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Nicola Wells**

Report **548010-W**
Project name ADDITIONAL - ENFIELD DD
Project ID 52680
Received Date May 29, 2017

Client Sample ID			**MW01-01**	**MW02-01**	**MW03-01**	**MW04-01**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-My28380**	**S17-My28381**	**S17-My28382**	**S17-My28383**
Date Sampled			**Apr 28, 2017**	**Apr 28, 2017**	**Apr 28, 2017**	**Apr 28, 2017**
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.001	0.008	0.019	< 0.001
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	< 0.001	0.003	0.001	0.001
Lead (filtered)	0.001	mg/L	0.003	< 0.001	< 0.001	< 0.001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.006	0.011	0.023	0.002
Zinc (filtered)	0.005	mg/L	0.084	0.015	0.015	0.010

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Metals M8 filtered	Sydney	May 29, 2017	28 Day

- Method: LTM-MET-3040 Metals in Waters by ICP-MS

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Melbourne
2-5 Kingston Town Close
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Phone : +61 3 8564 5000
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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	548010
		Phone:	02 8245 0300
		Fax:	
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Received:	May 29, 2017 11:23 AM
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Contact Name:	Nicola Wells

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

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	MW04-01	Apr 28, 2017		Water	S17-My28383	X
st Counts						4

Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066
ABN : 50 005 085 521 Telephone : +61 2 9900 8400

Date Reported:May 30, 2017

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

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

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs 20-130%

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	

Comments

Sample Integrity

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

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Metal (NSW)

Glenn Jackson
National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

548018

COC NSW

From: Nibha Vaidya
Sent: Monday, 29 May 2017 11:23 AM
To: Enviro Sample NSW; COC NSW; Rupan Virk
Subject: RE: 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 544088 : Site MITCHELL STREET ENFIELD DSI (52680)

Sorry report 546369, not 543661

Kind Regards,

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

From: Nibha Vaidya
Sent: Monday, 29 May 2017 11:14 AM
To: Enviro Sample NSW; COC NSW; Rupan Virk
Subject: 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 544088 : Site MITCHELL STREET ENFIELD DSI (52680)

Retest without dilutions please – 1 day TAT

Report 544088 - Ap23238 for BTEX and volatile TRH
Report 543661 - My15744, My15745, My15746 and My15747 for M8 filtered

Kind Regards,

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

From: Nicola Wells [mailto:NWells@jbsg.com.au]
Sent: Monday, 29 May 2017 10:27 AM
To: Nibha Vaidya
Cc: Seth Molinari
Subject: RE: Eurofins | mgt Test Results - Report 544088 : Site MITCHELL STREET ENFIELD DSI (52680)

Hi Nibha,

In reviewing the results I've found that the LOR on sample BH06_0.2-0.3 has been raised for a range of analysis (selected TRH, BTEX, naphthalene). This has meant that we do not have actual concentrations of these analytes as they are reported as below the raised LOR.

Are you able to re run this sample so that we have reported concentrations of the analytes?

Could you also please also explain the process of raising the LOR and why the sample wasn't re run initially?

29/5 UL

548019

COC NSW

From: Nibha Vaidya
Sent: Monday, 29 May 2017 11:23 AM
To: Enviro Sample NSW; COC NSW; Rupan Virk
Subject: RE: 1 DAY TAT - FW: Eurofins | mgt Test Results - Report 544088 : Site MITCHELL STREET ENFIELD DSI (52680)

Sorry report 546369, not 543661

Kind Regards,

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Retest without dilutions please – 1 day TAT

Report 544088 - Ap23238 for BTEX and volatile TRH
Report 543661 - My15744, My15745, My15746 and My15747 for M8 filtered

Kind Regards,

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Phone : +61 2 9900 8415
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To: Nibha Vaidya
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Are you able to re run this sample so that we have reported concentrations of the analytes?

Could you also please also explain the process of raising the LOR and why the sample wasn't re run initially?

29/5 VL

eurofins | mgt

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 18217

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Nicola Wells
Project name:	ADDITIONAL - MITCHELL STREET ENFIELD DSI
Project ID:	52680
COC number:	Not provided
Turn around time:	1 Day
Date/Time received:	May 29, 2017 11:23 AM
Eurofins | mgt reference:	**548234**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 15.6 degrees Celsius.

☑ All samples have been received as described on the above COC.

☑ COC has been completed correctly.

☑ Attempt to chill was evident.

☑ Appropriately preserved sample containers have been used.

☑ All samples were received in good condition.

☑ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.

☑ Appropriate sample containers have been used.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Nicola Wells - NWells@jbsg.com.au.

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Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	548234
		Phone:	02 8245 0300
		Fax:	
Project Name:	ADDITIONAL - MITCHELL STREET ENFIELD DSI		
Project ID:	52680		

Received:	May 29, 2017 11:23 AM
Due:	May 30, 2017
Priority:	1 Day
Contact Name:	Nicola Wells

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						BTEX and Volatile TRH
elbourne Laboratory - NATA Site # 1254 & 14271						
ydney Laboratory - NATA Site # 18217						X
isbane Laboratory - NATA Site # 20794						
erth Laboratory - NATA Site # 18217						
ternal Laboratory						
o	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
	BH06_0.2-0.3	Apr 28, 2017		Soil	S17-My28379	X
st Counts						1

mgt

eurofins

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
Sydney
NSW 2000

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Nicola Wells**

Report **548234-S-V2**
Project name ADDITIONAL - MITCHELL STREET ENFIELD DSI
Project ID 52680
Received Date May 29, 2017

Client Sample ID			**BH06_0.2-0.3**
Sample Matrix			**Soil**
Eurofins | mgt Sample No.			**S17-My28379**
Date Sampled			**Apr 28, 2017**
Test/Reference	LOR	Unit	
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	60
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH C6-C10	20	mg/kg	< 20
Volatile Organics			
Naphthalene[N02]	0.5	mg/kg	< 0.5

Sample History

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

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Description	Testing Site	Extracted	Holding Time
TRH C6-C10 less BTEX (F1)	Sydney	Jun 02, 2017	14 Day
- Method: LM-LTM-ORG-2010			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	May 29, 2017	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	May 29, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jun 02, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Jun 02, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			

Sydney
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web : www.eurofins.com.au

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**	
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	548234
		Phone:	02 8245 0300
		Fax:	
Project Name:	ADDITIONAL - MITCHELL STREET ENFIELD DSI		
Project ID:	52680		

Received:	May 29, 2017 11:23 AM		
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Contact Name:	Nicola Wells		

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

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Eurofins | mgt Unit F3, Building F, 16 Mars Road, Lane Cove West, NSW, Australia, 2066
ABN : 50 005 085 521 Telephone : +61 2 9900 8400

First Reported:May 30, 2017
Date Reported:Jun 02, 2017

Internal Quality Control Review and Glossary

General

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Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs 20-130%

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Volatile Organics							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	103			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	99			70-130	Pass	
Ethylbenzene	%	102			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
o-Xylene	%	100			70-130	Pass	
Xylenes - Total	%	101			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	101			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
Naphthalene	%	111			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-My24316	NCP	%	95			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-My24316	NCP	%	86			70-130	Pass	
Toluene	S17-My24316	NCP	%	87			70-130	Pass	
Ethylbenzene	S17-My24316	NCP	%	90			70-130	Pass	
m&p-Xylenes	S17-My24316	NCP	%	89			70-130	Pass	
o-Xylene	S17-My24316	NCP	%	89			70-130	Pass	
Xylenes - Total	S17-My24316	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	S17-My24316	NCP	%	94			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
Naphthalene	S17-My24316	NCP	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-My27066	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-My27066	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S17-My27066	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S17-My27066	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S17-My27066	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S17-My27066	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S17-My27066	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C10	S17-My27066	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Naphthalene	S17-My27066	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

This report has been revised to include TRH C6-C10 and Naphthalene results.

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Volatile (NSW)

Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Appendix E: QA/QC ESDAT Output

ESDAT QA Checker
Project:52680
Filter: ALL

Overview Summary
- Count of Samples
- Summary By Compound
- Count of Results

Holding Times
- Holding Time Errors (10)

Blanks
- Field Blanks
- Detects in Lab Blanks (1)
- SDG's without Storage Blanks (6)
- SDG's without Method Blanks (0)

Duplicates
- Field and Interlab Duplicates
- Lab Duplicates with high RPDs (0)
- Duplicate Samples with incorrect or missing Parent Samples (0)
- Samples at the same Location/Depth/Time not specified as duplicates (1)

Surrogates
- Surrogate Variation > 30% or outside lab LCL or UCL (16)

Lab Control Samples
- SDG's without a Laboratory Control Sample (0)
- Laboratory Control Samples, Error > 30% (23)

Certified and Standard Reference Materials
- Certified Reference Materials - Error > 30% (0)

Matrix Spikes
- SDG's without a Matrix Spike (0)
- Trip Spikes with invalid Control Sample (0)
- Less than 1 matrix spike in 20 samples, or less than 1 matrix duplicate in 20 samples (2)
- Matrix Spike Recoveries less than 70% or greater than 130% or outside lab LCL or UCL (7)
- Trip Spike Recoveries (70% - 130% is acceptable) (12)

Inorganic
- Na + CL > TDS (0)
- BOD > COD (0)
- BOD > COD (0)

Other
- Unit Conversion Problems (0)
- OriginalChemNames Requiring Validation (1)
- Samples with no Results (0)
- Samples associated with Wells which are not specified in the Well Table (9)
- Aborted Analysis (0)

Contents

Count of Samples

Matrix Type	SOIL	WATER
First Sample Date	28-Apr-17	28-Apr-17
Last Sample Date	28-Apr-17	16-May-17
Sampling Period (days)	1	19
Number of Samples Submitted	10	13
Number of Non QA Samples Submitted	8	9
Number of Field Blanks	0	0
Number of Trip Blanks	0	2
Number of Rinsates	0	1
Number of Field Duplicates	1	1
Number of Trip Spikes	0	2
Number of Lab Duplicates	3	1
Number of LCSs	13	13
Number of CRMs	0	0
Number of Method Blanks	10	12
Number of Storage Blanks	0	0
Number of Matrix Spikes	10	7
Number of Matrix Spike Dupes	0	0

			Num Results	Holding Times (days)				Lab Control Samples			Method and Storage Blanks		
Chem_Group	**ChemName**	**Range**	**Non QA (Normal + Composite)**	**Volatility Group**	**Sample to Extraction**	**Sample to Analysis**	**Acceptable**	**Recovery %**	**Num Reported**	**Acceptable**	**Range**	**Num Reported**	**Acceptable**
Asbestos	Approx. Sample Mass		3	Other	0	7	Y		0			0	
	Asbestos from ACM in Soil		3	Other	0	7	Y		0			0	
	Asbestos from FA & AF in Soil		3	Other	0	7	Y		0			0	
	Mass ACM		3	Other	0	7	Y		0			0	
	Mass AF		3	Other	0	7	Y		0			0	
	Mass Asbestos in ACM		3	Other	0	7	Y		0			0	
	Mass Asbestos in AF		3	Other	0	7	Y		0			0	
	Mass Asbestos in FA		3	Other	0	7	Y		0			0	
	Mass Asbestos in FA & AF		3	Other	0	7	Y		0			0	
	Mass FA		3	Other	0	7	Y		0			0	
Asbestos - Trace Analysis	ACM - Comment		3	Other	0	7	Y		0			0	
	AF - Comment		3	Other	0	7	Y		0			0	
	FA - Comment		3	Other	0	7	Y		0			0	
	Organic Fibres - Comment		3	Other	0	7	Y		0			0	
	Respirable Fibres - Comment		3	Other	0	7	Y		0			0	
	Synthetic Fibres - Comment		3	Other	0	7	Y		0			0	
BTEX	Benzene	0.1 mg/kg	8	VOC	4 to 31	6 to 32	**N**	97 to 114	3	Y	ND	3	Y
	Ethylbenzene	0.1 mg/kg	8	VOC	4 to 31	6 to 32	**N**	85 to 120	3	Y	ND	3	Y
	Toluene	0.1 mg/kg	8	VOC	4 to 31	6 to 32	**N**	80 to 118	3	Y	ND	3	Y
	Xylene (m & p)	0.2 mg/kg	8	VOC	4 to 31	6 to 32	**N**	89 to 115	3	Y	ND	3	Y
	Xylene (o)	0.1 mg/kg	8	VOC	4 to 31	6 to 32	**N**	87 to 117	3	Y	ND	3	Y
	Xylene (Total)	0.3 mg/kg	8	VOC	4 to 31	6 to 32	**N**	101 to 116	2	Y	ND	3	Y
Chlorinated Benzenes	Hexachlorobenzene	0.05 mg/kg	3	SVOC	5	7	Y	125 to 125	1	Y	ND	1	Y
Herbicides & Fungicides	Dinoseb	20 mg/kg	3	SVOC	7	7	Y	82 to 82	1	Y	ND	1	Y
Ionic Balance	Cation Exchange Capacity	0.05 meq/100g	1	Other	5	7	Y		0		ND	1	Y
	EC 1:5 soil:water	10 µS/cm	1	Other	5	7	Y		0			0	
Metals & Metalloids	Arsenic (Total)	2 mg/kg	7	Other	4 to 6	4 to 7	Y	89 to 109	2	Y	ND	2	Y
	Cadmium	0.4 mg/kg	7	Other	4 to 6	4 to 7	Y	84 to 101	2	Y	ND	2	Y
	Chromium (Total)	5 mg/kg	7	Other	4 to 6	4 to 7	Y	86 to 105	2	Y	ND	2	Y
	Copper	5 mg/kg	7	Other	4 to 6	4 to 7	Y	91 to 107	2	Y	ND	2	Y
	Lead	5 mg/kg	7	Other	4 to 6	4 to 7	Y	102 to 105	2	Y	ND	2	Y
	Mercury (Inorganic)	0.1 mg/kg	7	Other	4 to 6	4 to 7	Y	104 to 104	2	Y	ND	2	Y
	Nickel	5 mg/kg	7	Other	4 to 6	4 to 7	Y	87 to 96	2	Y	ND	2	Y
	Zinc	5 mg/kg	7	Other	4 to 6	4 to 7	Y	81 to 101	2	Y	ND	2	Y
Organochlorine Pesticides	4,4-DDE	0.05 mg/kg	3	SVOC	5	7	Y	117 to 117	1	Y	ND	1	Y
	Aldrin	0.05 mg/kg	3	SVOC	5	7	Y	109 to 109	1	Y	ND	1	Y
	alpha-BHC	0.05 mg/kg	3	SVOC	5	7	Y	120 to 120	1	Y	ND	1	Y
	beta-BHC	0.05 mg/kg	3	SVOC	5	7	Y	119 to 119	1	Y	ND	1	Y
	Chlordane	0.1 mg/kg	3	SVOC	5	7	Y	122 to 122	1	Y	ND	1	Y
	DDD	0.05 mg/kg	3	SVOC	5	7	Y	130 to 130	1	**N**	ND	1	Y
	DDT	0.05 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	delta-BHC	0.05 mg/kg	3	SVOC	5	7	Y	126 to 126	1	Y	ND	1	Y
	Dieldrin	0.05 mg/kg	3	SVOC	5	7	Y	128 to 128	1	Y	ND	1	Y
	Endosulfan alpha	0.05 mg/kg	3	SVOC	5	7	Y	121 to 121	1	Y	ND	1	Y
	Endosulfan beta	0.05 mg/kg	3	SVOC	5	7	Y	125 to 125	1	Y	ND	1	Y
	Endosulfan sulphate	0.05 mg/kg	3	SVOC	5	7	Y	125 to 125	1	Y	ND	1	Y
	Endrin	0.05 mg/kg	3	SVOC	5	7	Y	128 to 128	1	Y	ND	1	Y
	Endrin aldehyde	0.05 mg/kg	3	SVOC	5	7	Y	116 to 116	1	Y	ND	1	Y
	Endrin ketone	0.05 mg/kg	3	SVOC	5	7	Y	126 to 126	1	Y	ND	1	Y
	Heptachlor	0.05 mg/kg	3	SVOC	5	7	Y	126 to 126	1	Y	ND	1	Y
	Heptachlor Epoxide	0.05 mg/kg	3	SVOC	5	7	Y	78 to 78	1	Y	ND	1	Y
	Lindane	0.05 mg/kg	3	SVOC	5	7	Y	115 to 115	1	Y	ND	1	Y
	Methoxychlor	0.2 mg/kg	3	SVOC	5	7	Y	118 to 118	1	Y	ND	1	Y
	Pentachlorophenol	1 mg/kg	3	SVOC	7	7	Y	91 to 91	1	Y	ND	1	Y
	Toxaphene	1 mg/kg	3	SVOC	5	7	Y	128 to 128	1	Y	ND	1	Y
Organophosphorus Pesticides	Azinphos methyl	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Chlorfenvinphos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Chlorpyrifos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Chlorpyrifos-methyl	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Coumaphos	2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Demeton-O	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Demeton-S	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Diazinon	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Dichlorvos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Dimethoate	0.2 mg/kg	3	SVOC	5	7	Y	103 to 103	1	Y	ND	1	Y
	Disulfoton	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	EPN	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Ethion	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Ethoprophos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Fenitrothion	0.2 mg/kg	3	SVOC	5	7	Y	105 to 105	1	Y	ND	1	Y
	Fensulfothion	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Fenthion	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Malathion	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Merphos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Mevinphos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Monocrotophos	2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Omethoate	2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Parathion	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Parathion methyl	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Phorate	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Pirimiphos methyl	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Pyrazophos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Ronnel	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Sulprofos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Terbufos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Tetrachlorvinphos	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Tokuthion	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Trichloronate	0.2 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
Other	% Clay	1 %	1	Other	5	7	Y	100 to 100	1	Y	ND	1	Y
	% Moisture 103oC	1 %	7	Other	0	7	Y		0			0	

Filter: ALL

	Moisture		0	Other	4	5	Y		0			0	
Phenols	2,4,5-trichlorophenol	1 mg/kg	3	SVOC	7	7	Y	90 to 90	1	Y	ND	1	Y
	2,4,6-trichlorophenol	1 mg/kg	3	SVOC	7	7	Y	88 to 88	1	Y	ND	1	Y
	2,4-dichlorophenol	0.5 mg/kg	3	SVOC	7	7	Y	87 to 87	1	Y	ND	1	Y
	2,4-dimethylphenol	0.5 mg/kg	3	SVOC	7	7	Y	81 to 81	1	Y	ND	1	Y
	2,4-dinitrophenol	5 mg/kg	3	SVOC	7	7	Y	78 to 78	1	Y	ND	1	Y
	2,6-dichlorophenol	0.5 mg/kg	3	SVOC	7	7	Y	85 to 85	1	Y	ND	1	Y
	2-chlorophenol	0.5 mg/kg	3	SVOC	7	7	Y	82 to 82	1	Y	ND	1	Y
	2-Methylphenol	0.2 mg/kg	3	SVOC	7	7	Y	87 to 87	1	Y	ND	1	Y
	2-nitrophenol	1 mg/kg	3	SVOC	7	7	Y	77 to 77	1	Y	ND	1	Y
	3- & 4-Methylphenol	0.4 mg/kg	3	SVOC	7	7	Y	81 to 81	1	Y	ND	1	Y
	4,6-Dinitro-2-methylphenol	5 mg/kg	3	SVOC	7	7	Y	104 to 104	1	Y	ND	1	Y
	4,6-Dinitro-o-cyclohexyl phenol	20 mg/kg	3	SVOC	7	7	Y	103 to 103	1	Y	ND	1	Y
	4-Chloro-3-Methylphenol	1 mg/kg	3	SVOC	7	7	Y	77 to 77	1	Y	ND	1	Y
	4-nitrophenol	5 mg/kg	3	SVOC	7	7	Y	95 to 95	1	Y	ND	1	Y
	Phenol	0.5 mg/kg	3	SVOC	5	7	Y	79 to 79	1	Y	ND	1	Y
	Total Halogenated Phenol	1 mg/kg	3	SVOC	7	7	Y		0			0	
	Total Non-Halogenated Phenol	20 mg/kg	3	SVOC	7	7	Y		0			0	
	Total Tetrachlorophenols	1 mg/kg	3	SVOC	7	7	Y	96 to 96	1	Y	ND	1	Y
Polychlorinated Biphenyls	Aroclor 1016	0.5 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Aroclor 1221	0.1 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Aroclor 1232	0.5 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Aroclor 1242	0.5 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Aroclor 1248	0.5 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Aroclor 1254	0.5 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Aroclor 1260	0.5 mg/kg	3	SVOC	5	7	Y	81 to 81	1	Y	ND	1	Y
	PCBs (Total)	0.5 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
Polycyclic Aromatic Hydrocarbons	Acenaphthene	0.5 mg/kg	3	SVOC	5	7	Y	77 to 77	1	Y	ND	1	Y
	Acenaphthylene	0.5 mg/kg	3	SVOC	5	7	Y	83 to 83	1	Y	ND	1	Y
	Anthracene	0.5 mg/kg	3	SVOC	5	7	Y	93 to 93	1	Y	ND	1	Y
	Benz(a)anthracene	0.5 mg/kg	3	SVOC	5	7	Y	88 to 88	1	Y	ND	1	Y
	Benzo(a)pyrene	0.5 mg/kg	3	SVOC	5	7	Y	82 to 82	1	Y	ND	1	Y
	Benzo(a)pyrene TEQ (lower bound)[a]	0.5 mg/kg	3	SVOC	0	7	Y		0			0	
	Benzo(a)pyrene TEQ (medium bound)[a]	0.5 mg/kg	3	SVOC	0	7	Y		0			0	
	Benzo(a)pyrene TEQ (upper bound)[a]	0.5 mg/kg	3	SVOC	0	7	Y		0			0	
	Benzo(b,j)fluoranthene	0.5 mg/kg	3	SVOC	5	7	Y		0		ND	1	Y
	Benzo(g,h,i)perylene	0.5 mg/kg	3	SVOC	5	7	Y	83 to 83	1	Y	ND	1	Y
	Benzo(k)fluoranthene	0.5 mg/kg	3	SVOC	5	7	Y	87 to 87	1	Y	ND	1	Y
	Chrysene	0.5 mg/kg	3	SVOC	5	7	Y	89 to 89	1	Y	ND	1	Y
	Dibenz(a,h)anthracene	0.5 mg/kg	3	SVOC	5	7	Y	79 to 79	1	Y	ND	1	Y
	Fluoranthene	0.5 mg/kg	3	SVOC	5	7	Y	86 to 86	1	Y	ND	1	Y
	Fluorene	0.5 mg/kg	3	SVOC	5	7	Y	87 to 87	1	Y	ND	1	Y
	Indeno(1,2,3-c,d)pyrene	0.5 mg/kg	3	SVOC	5	7	Y	83 to 83	1	Y	ND	1	Y
	Naphthalene	0.5 mg/kg	11	VOC	4 to 35	6 to 32	**N**	81 to 129	3	Y	ND	4	Y
	PAHs (Total)	0.5 mg/kg	3	SVOC	0	7	Y		0			0	
	Phenanthrene	0.5 mg/kg	3	SVOC	5	7	Y	89 to 89	1	Y	ND	1	Y
	Pyrene	0.5 mg/kg	3	SVOC	5	7	Y	86 to 86	1	Y	ND	1	Y
Surrogate	4-Terphenyl-d14		0	SVOC			Y		0			0	
	Surrogate 2-fluorobiphenyl		0	SVOC			Y		0			0	
	Surrogate 4-BFB		0	VOC			Y		0			0	
	Surrogate aaa-Trifluorotoluene		0	SVOC			Y	111 to 111	1	Y		0	
	Surrogate Dibutylchlorendate		0	SVOC			Y		0			0	
	Surrogate o-Terphenyl		0	SVOC			Y	119 to 119	1	Y		0	
	Surrogate Phenol-d6		0	SVOC			Y		0			0	
	Surrogate TCMX		0	SVOC			Y		0			0	
	Surrogate Triphenylphosphate		0	SVOC			Y		0			0	
TPHs (NEPC 1999)	C10-C14 Fraction	20 mg/kg	7	SVOC	4 to 6	5 to 7	Y	106 to 109	2	Y	ND	2	Y
	C10-C36 Fraction (Total)	50 mg/kg	7	SVOC	0	7	Y		0			0	
	C15-C28 Fraction	50 mg/kg	7	SVOC	4 to 6	5 to 7	Y	101 to 101	1	Y	ND	2	Y
	C29-C36 Fraction	50 mg/kg	7	SVOC	4 to 6	5 to 7	Y	91 to 91	1	Y	ND	2	Y
	C6-C9 Fraction	20 mg/kg	8	VOC	4 to 31	6 to 32	**N**	88 to 111	3	Y	ND	3	Y
TRHs (NEPC 2013)	>C10-C16 Fraction	50 mg/kg	7	SVOC	4 to 6	5 to 7	Y	100 to 106	2	Y	ND	2	Y
	>C10-C16 less Naphthalene (F2)	50 mg/kg	7	SVOC	0 to 4	5 to 7	Y		0			0	
	>C10-C40 Fraction (Total)		0	SVOC	4	5	Y		0		ND	1	Y
	>C16-C34 Fraction	100 mg/kg	7	SVOC	4 to 6	5 to 7	Y	101 to 101	1	Y	ND	2	Y
	>C34-C40 Fraction	100 mg/kg	7	SVOC	4 to 6	5 to 7	Y	91 to 91	1	Y	ND	2	Y
	C6-C10 Fraction	20 mg/kg	8	VOC	4 to 35	6 to 32	**N**	88 to 106	3	Y	ND	3	Y
	C6-C10 less BTEX (F1)	20 mg/kg	8	VOC	0 to 35	6 to 32	**N**		0			0	
BTEX	Benzene	0.001 mg/L	5	VOC	0 to 1	2 to 7	Y	89 to 94	3	Y	ND	3	Y
	Ethylbenzene	0.001 mg/L	5	VOC	0 to 1	2 to 7	Y	91 to 104	3	Y	ND	3	Y
	Toluene	0.001 mg/L	5	VOC	0 to 1	2 to 7	Y	90 to 107	3	Y	ND	3	Y
	Xylene (m & p)	0.002 mg/L	5	VOC	0 to 1	2 to 7	Y	94 to 116	3	Y	ND	3	Y
	Xylene (o)	0.001 mg/L	5	VOC	0 to 1	2 to 7	Y	93 to 112	3	Y	ND	3	Y
	Xylene (Total)	0.003 mg/L	4	VOC	0 to 1	7	Y	93 to 115	2	Y	ND	2	Y
Herbicides & Fungicides	Dinoseb	0.1 mg/L	4	SVOC	6 to 7	7	Y	38 to 54	2	**N**	ND	2	Y
Metals & Metalloids	Arsenic (Total)	0.001 mg/L	9	Other	0 to 31	2 to 32	Y	86 to 112	3	Y	ND	4	Y
	Cadmium	0.0001 to 0.0002 mg/L	9	Other	0 to 31	2 to 32	Y	86 to 116	3	Y	ND	4	Y
	Chromium (Total)	0.001 mg/L	9	Other	0 to 31	2 to 32	Y	83 to 113	3	Y	ND	4	Y
	Copper	0.001 mg/L	9	Other	0 to 31	2 to 32	Y	86 to 118	3	Y	ND	4	Y
	Lead	0.001 mg/L	9	Other	0 to 31	2 to 32	Y	98 to 110	3	Y	ND to 0.001 mg/l	4	**N**
	Mercury (Inorganic)	0.00005 to 0.0001 mg/L	9	Other	0 to 31	2 to 32	Y	92 to 125	3	Y	ND	4	Y
	Nickel	0.001 mg/L	9	Other	0 to 31	2 to 32	Y	85 to 114	3	Y	ND	4	Y
	Zinc	0.001 to 0.005 mg/L	9	Other	0 to 31	2 to 32	Y	84 to 114	3	Y	ND	4	Y

Organochlorine Pesticides	Pentachlorophenol	0.01 mg/L	4	SVOC	6 to 7	7	Y	38 to 46	2	**N**	ND	2	Y
PAHs in Water	Benzo(b,j+k)fluoranthene	2 µg/L	1	Other	2	3	Y		0		ND	1	Y
Phenols	2,4,5-trichlorophenol	0.001 mg/L	4	SVOC	6 to 7	7	Y	39 to 51	2	**N**	ND	2	Y
	2,4,6-trichlorophenol	0.01 mg/L	4	SVOC	6 to 7	7	Y	37 to 50	2	**N**	ND	2	Y
	2,4-dichlorophenol	0.001 mg/L	4	SVOC	6 to 7	7	Y	75 to 118	2	Y	ND	2	Y
	2,4-dimethylphenol	0.001 mg/L	4	SVOC	6 to 7	7	Y	73 to 103	2	Y	ND	2	Y
	2,4-dinitrophenol	0.001 mg/L	4	SVOC	6 to 7	7	Y	32 to 110	2	**N**	ND	2	Y
	2,6-dichlorophenol	0.003 mg/L	4	SVOC	6 to 7	7	Y	80 to 112	2	Y	ND	2	Y
	2-chlorophenol	0.003 mg/L	4	SVOC	6 to 7	7	Y	73 to 107	2	Y	ND	2	Y
	2-Methylphenol	0.003 mg/L	4	SVOC	6 to 7	7	Y	66 to 91	2	**N**	ND	2	Y
	2-nitrophenol	0.005 mg/L	4	SVOC	6 to 7	7	Y	43 to 62	2	**N**	ND	2	Y
	3- & 4-Methylphenol	0.006 mg/L	4	SVOC	6 to 7	7	Y	52 to 78	2	**N**	ND	2	Y
	4,6-Dinitro-2-methylphenol	0.005 mg/L	4	SVOC	6 to 7	7	Y	31 to 31	1	**N**	ND	2	Y
	4,6-Dinitro-o-cyclohexyl phenol	0.1 mg/L	4	SVOC	6 to 7	7	Y	32 to 50	2	**N**	ND	2	Y
	4-Chloro-3-Methylphenol	0.01 mg/L	4	SVOC	6 to 7	7	Y	35 to 47	2	**N**	ND	2	Y
	4-nitrophenol	0.001 mg/L	4	SVOC	6 to 7	7	Y	32 to 32	1	**N**	ND	2	Y
	Phenol	0.003 mg/L	4	SVOC	3 to 6	7	Y	35 to 35	1	**N**	ND	2	Y
	Phenols (Total)	0.05 mg/L	1	SVOC	1	1	Y	100 to 100	1	Y	ND	1	Y
	Total Halogenated Phenol	0.01 mg/L	4	SVOC	0 to 7	7	Y		0			0	
	Total Non-Halogenated Phenol	0.1 mg/L	4	SVOC	0 to 7	7	Y		0			0	
	Total Tetrachlorophenols	0.03 mg/L	4	SVOC	6 to 7	7	Y	33 to 48	2	**N**	ND	2	Y
Polychlorinated Biphenyls	Aroclor 1016		0	SVOC	3	7	Y		0		ND	1	Y
	Aroclor 1221		0	SVOC	3	7	Y		0		ND	1	Y
	Aroclor 1232		0	SVOC	3	7	Y		0		ND	1	Y
	Aroclor 1242		0	SVOC	3	7	Y		0		ND	1	Y
	Aroclor 1248		0	SVOC	3	7	Y		0		ND	1	Y
	Aroclor 1254		0	SVOC	3	7	Y		0		ND	1	Y
	Aroclor 1260		0	SVOC	3	7	Y		0		ND	1	Y
	PCBs (Total)		0	SVOC	3	7	Y		0		ND	1	Y
Polycyclic Aromatic Hydrocarbons	Acenaphthene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	79 to 81	2	Y	ND	3	Y
	Acenaphthylene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	78 to 91	2	Y	ND	3	Y
	Anthracene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	80 to 86	2	Y	ND	3	Y
	Benz(a)anthracene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	90 to 95	2	Y	ND	3	Y
	Benzo(a)pyrene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	93 to 125	3	Y	ND	3	Y
	Benzo(a)pyrene TEQ (WHO)	0.005 mg/L	1	SVOC	2	3	Y		0		ND	1	Y
	Benzo(b,j)fluoranthene	0.001 mg/L	4	SVOC	3 to 6	7	Y	77 to 99	2	Y	ND	2	Y
	Benzo(g,h,i)perylene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	80 to 80	2	Y	ND	3	Y
	Benzo(k)fluoranthene	0.001 mg/L	4	SVOC	3 to 6	7	Y	80 to 96	2	Y	ND	2	Y
	Chrysene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	87 to 100	3	Y	ND	3	Y
	Dibenz(a,h)anthracene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	79 to 82	2	Y	ND	3	Y
	Fluoranthene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	84 to 120	3	Y	ND	3	Y
	Fluorene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	80 to 112	3	Y	ND	3	Y
	Indeno(1,2,3-c,d)pyrene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	77 to 82	2	Y	ND	3	Y
	Naphthalene	0.001 to 0.01 mg/L	10	VOC	0 to 6	2 to 7	Y	75 to 95	5	Y	ND	6	Y
	PAHs (Total)	0.001 mg/L	4	SVOC	0 to 1	7	Y		0			0	
	Phenanthrene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	84 to 131	3	**N**	ND	3	Y
	Pyrene	0.001 mg/L	5	SVOC	2 to 6	3 to 7	Y	83 to 118	3	Y	ND	3	Y
	Total Positive PAHs	0.001 mg/L	1	SVOC	2	3	Y		0		ND	1	Y
Surrogate	4-Terphenyl-d14		0	SVOC			Y	128 to 128	1	Y		0	
	Surrogate 2-fluorobiphenyl		0	SVOC			Y		0			0	
	Surrogate 4-BFB		0	VOC			Y	110 to 110	1	Y		0	
	Surrogate Dibromofluoromethane		0	VOC			Y	89 to 89	1	Y		0	
	Surrogate o-Terphenyl		0	SVOC			Y	89 to 89	1	Y		0	
	Surrogate TCMX		0	SVOC			Y		0			0	
	Surrogate toluene-d8		0	VOC			Y	105 to 105	1	Y		0	
TPHs (NEPC 1999)	C10-C14 Fraction	0.05 mg/L	5	SVOC	2 to 6	3 to 7	Y	83 to 125	3	Y	ND	3	Y
	C10-C36 Fraction (Total)	0.1 mg/L	4	SVOC	0 to 1	7	Y		0			0	
	C15-C28 Fraction	0.1 mg/L	5	SVOC	2 to 6	3 to 7	Y	101 to 101	1	Y	ND	3	Y
	C29-C36 Fraction	0.1 mg/L	5	SVOC	2 to 6	3 to 7	Y	84 to 84	1	Y	ND	3	Y
	C6-C9 Fraction	0.01 to 0.02 mg/L	5	VOC	0 to 1	2 to 7	Y	92 to 98	3	Y	ND	3	Y
TRHs (NEPC 2013)	>C10-C16 Fraction	0.05 mg/L	5	SVOC	2 to 6	3 to 7	Y	95 to 128	3	Y	ND	3	Y
	>C10-C16 less Naphthalene (F2)	0.05 mg/L	5	SVOC	0 to 2	3 to 7	Y		0			0	
	>C16-C34 Fraction	0.1 mg/L	5	SVOC	2 to 6	3 to 7	Y	101 to 101	1	Y	ND	3	Y
	>C34-C40 Fraction	0.1 mg/L	5	SVOC	2 to 6	3 to 7	Y	84 to 84	1	Y	ND	3	Y
	C6-C10 Fraction	0.01 to 0.02 mg/L	5	VOC	0 to 1	2 to 7	Y	89 to 98	3	Y	ND	3	Y
	C6-C10 less BTEX (F1)	0.01 to 0.02 mg/L	5	VOC	0 to 1	2 to 7	Y		0			0	

Laboratory Duplicates			Surrogates			Matrix,Trip and Compound Spikes			Field,Rinsate and Trip Blanks			Field Duplicates		
Max RPD > EQL x 1	Num Reported	Acceptable	Recovery %	Num Reported	Acceptable	Recovery %	Num Reported	Acceptable	Range	Num Reported	Acceptable	Max RPD > EQL x 1	Num Reported	Acceptable
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		86 to 102	2	Y		0			1	Y
	0	**N**		0		90 to 107	2	Y		0			1	Y
	0	**N**		0		87 to 104	2	Y		0			1	Y
	0	**N**		0		89 to 103	2	Y		0			1	Y
	0	**N**		0		89 to 103	2	Y		0			1	Y
	0	**N**		0		89 to 103	2	Y		0			1	Y
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		72 to 72	1	Y		0		35	1	Y
	0	**N**		0		76 to 76	1	Y		0			1	Y
	0	**N**		0		89 to 89	1	Y		0		17	1	Y
	0	**N**		0		80 to 80	1	Y		0		7	1	Y
	0	**N**		0		74 to 74	1	Y		0		8	1	Y
	0	**N**		0		93 to 93	1	Y		0			1	Y
	0	**N**		0		85 to 85	1	Y		0		15	1	Y
	0	**N**		0		86 to 86	1	Y		0		11	1	Y
	0	**N**		0		125 to 125	1	Y		0			0	**N**
	0	**N**		0		113 to 113	1	Y		0			0	**N**
	0	**N**		0		119 to 119	1	Y		0			0	**N**
	0	**N**		0		100 to 100	1	Y		0			0	**N**
	0	**N**		0		125 to 125	1	Y		0			0	**N**
	0	**N**		0		128 to 128	1	Y		0			0	**N**
	0	**N**		0		87 to 87	1	Y		0			0	**N**
	0	**N**		0		117 to 117	1	Y		0			0	**N**
	0	**N**		0		128 to 128	1	Y		0			0	**N**
	0	**N**		0		128 to 128	1	Y		0			0	**N**
	0	**N**		0		121 to 121	1	Y		0			0	**N**
	0	**N**		0		119 to 119	1	Y		0			0	**N**
	0	**N**		0		126 to 126	1	Y		0			0	**N**
	0	**N**		0		100 to 100	1	Y		0			0	**N**
	0	**N**		0		128 to 128	1	Y		0			0	**N**
	0	**N**		0		114 to 114	1	Y		0			0	**N**
	0	**N**		0		76 to 76	1	Y		0			0	**N**
	0	**N**		0		111 to 111	1	Y		0			0	**N**
	0	**N**		0		102 to 102	1	Y		0			0	**N**
	0	**N**		0		83 to 83	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		103 to 103	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		105 to 105	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	1	Y		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
22	1	Y		0			0			0			0	**N**
	0	**N**		0			0			0		18	1	Y

	0	**N**		0			0			0			0	**N**
	0	**N**		0		91 to 91	1	Y		0			0	**N**
	0	**N**		0		93 to 93	1	Y		0			0	**N**
	0	**N**		0		95 to 95	1	Y		0			0	**N**
	0	**N**		0		86 to 86	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		93 to 93	1	Y		0			0	**N**
	0	**N**		0		90 to 90	1	Y		0			0	**N**
	0	**N**		0		74 to 74	1	Y		0			0	**N**
	0	**N**		0		87 to 87	1	Y		0			0	**N**
	0	**N**		0		94 to 94	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		91 to 91	1	Y		0			0	**N**
	0	**N**		0		102 to 102	1	Y		0			0	**N**
	0	**N**		0		88 to 88	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		94 to 94	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		85 to 85	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		82 to 82	1	Y		0			0	**N**
	0	**N**		0		85 to 85	1	Y		0			0	**N**
	0	**N**		0		91 to 91	1	Y		0			0	**N**
	0	**N**		0		85 to 85	1	Y		0			0	**N**
	0	**N**		0		77 to 77	1	Y		0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0			0			0	**N**
	0	**N**		0		65 to 65	1	**N**		0			0	**N**
	0	**N**		0		87 to 87	1	Y		0			0	**N**
	0	**N**		0		80 to 80	1	Y		0			0	**N**
	0	**N**		0		85 to 85	1	Y		0			0	**N**
	0	**N**		0		84 to 84	1	Y		0			0	**N**
	0	**N**		0		78 to 78	1	Y		0			0	**N**
	0	**N**		0		91 to 91	1	Y		0			0	**N**
	0	**N**		0		87 to 87	1	Y		0			0	**N**
	0	**N**		0		78 to 100	3	Y		0			1	Y
	0	**N**		0			0			0			0	**N**
	0	**N**		0		85 to 85	1	Y		0			0	**N**
	0	**N**		0		75 to 75	1	Y		0			0	**N**
	0	**N**	76 to 77	3	Y		0			0			0	**N**
	0	**N**	73 to 76	3	Y		0			0			0	**N**
	0	**N**	60 to 72	9	**N**		0			0			0	**N**
	0	**N**	100 to 111	3	Y		0			0			0	**N**
	0	**N**	52 to 58	3	**N**		0			0			0	**N**
	0	**N**	86 to 119	3	Y		0			0			0	**N**
	0	**N**	66 to 74	3	**N**		0			0			0	**N**
	0	**N**	76 to 95	3	Y		0			0			0	**N**
	0	**N**	96 to 98	3	Y		0			0			0	**N**
	1	Y		0		96 to 96	1	Y		0			1	Y
	0	**N**		0			0			0			1	Y
8	1	Y		0			0			0			1	Y
9	1	Y		0			0			0			1	Y
	1	Y		0		95 to 108	2	Y		0			1	Y
	1	Y		0		88 to 88	1	Y		0			1	Y
	0	**N**		0			0			0			1	Y
	0	**N**		0			0			0			0	**N**
9	1	Y		0			0			0			1	Y
	1	Y		0			0			0			1	Y
	1	Y		0		94 to 108	2	Y		0			1	Y
	0	**N**		0			0			0			1	Y
	0	**N**		0		95 to 103	4	Y	ND	3	Y		1	Y
	0	**N**		0		83 to 96	4	Y	ND	3	Y		1	Y
	0	**N**		0		88 to 95	4	Y	ND	3	Y		1	Y
	0	**N**		0		90 to 99	4	Y	ND	3	Y		1	Y
	0	**N**		0		87 to 100	4	Y	ND	3	Y		1	Y
	0	**N**		0		89 to 99	4	Y	ND	3	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
0	1	Y		0		88 to 122	2	Y	ND	1	Y	133	1	**N**
	1	Y		0		89 to 121	2	Y	ND	1	Y		1	Y
	1	Y		0		83 to 117	2	Y	ND	1	Y		1	Y
	1	Y		0		79 to 109	2	Y	0.002 to 0.002 mg/l	1	**N**		1	Y
	1	Y		0		94 to 115	2	Y	ND	1	Y	164	1	**N**
	0	**N**		0		88 to 91	2	Y	ND	1	Y	156	1	**N**
0	1	Y		0		79 to 110	2	Y	ND	1	Y	151	1	**N**
0	1	Y		0		74 to 110	2	Y	ND	1	Y		1	Y

	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0		69 to 69	1	**N**	ND	1	Y		1	Y
	0	**N**		0		74 to 74	1	Y	ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0		53 to 53	1	**N**	ND	1	Y		1	Y
	0	**N**		0		71 to 71	1	Y	ND	1	Y		1	Y
	0	**N**		0		64 to 64	1	**N**	ND	1	Y		1	Y
	0	**N**		0		40 to 40	1	**N**	ND	1	Y		1	Y
	0	**N**		0		56 to 56	1	**N**	ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0		32 to 32	1	**N**	ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0			0			0	**N**
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		0	**N**
	0	**N**		0			0		ND	1	Y		0	**N**
	0	**N**		0			0		ND	1	Y		0	**N**
	0	**N**		0			0		ND	1	Y		0	**N**
	0	**N**		0			0		ND	1	Y		0	**N**
	0	**N**		0			0		ND	1	Y		0	**N**
	0	**N**		0			0		ND	1	Y		0	**N**
	0	**N**		0			0		ND	1	Y		0	**N**
	0	**N**		0		71 to 77	2	Y	ND	1	Y		1	Y
	0	**N**		0		124 to 124	1	Y	ND	1	Y		1	Y
	0	**N**		0		77 to 77	1	Y	ND	1	Y		1	Y
	0	**N**		0		82 to 82	2	Y	ND	1	Y		1	Y
	0	**N**		0		77 to 82	2	Y	ND	1	Y		1	Y
	0	**N**		0			0			0			0	**N**
	0	**N**		0		101 to 101	1	Y	ND	1	Y		1	Y
	0	**N**		0		72 to 72	1	Y	ND	1	Y		1	Y
	0	**N**		0		72 to 93	2	Y	ND	1	Y		1	Y
	0	**N**		0		82 to 84	2	Y	ND	1	Y		1	Y
	0	**N**		0		72 to 72	1	Y	ND	1	Y		1	Y
	0	**N**		0		74 to 83	2	Y	ND	1	Y		1	Y
	0	**N**		0		76 to 76	2	Y	ND	1	Y		1	Y
	0	**N**		0		70 to 72	2	**N**	ND	1	Y		1	Y
	0	**N**		0		72 to 93	4	Y	ND	2	Y		2	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0		70 to 82	2	**N**	ND	1	Y		1	Y
	0	**N**		0		72 to 79	2	Y	ND	1	Y		1	Y
	0	**N**		0			0			0			0	**N**
	0	**N**	53 to 128	9	**N**		0			0			0	**N**
	0	**N**	51 to 78	6	**N**		0			0			0	**N**
	0	**N**	74 to 110	13	Y		0			0			0	**N**
	0	**N**	89 to 106	3	Y		0			0			0	**N**
	0	**N**	70 to 89	3	**N**		0			0			0	**N**
	0	**N**	1 to 1	1	**N**		0			0			0	**N**
	0	**N**	97 to 105	3	Y		0			0			0	**N**
	0	**N**		0		116 to 116	1	Y	ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y	120	1	**N**
	0	**N**		0			0		ND	1	Y	67	1	**N**
	0	**N**		0			0		ND	1	Y	67	1	**N**
	0	**N**		0		98 to 126	2	Y	ND	1	Y		1	Y
	0	**N**		0		125 to 125	1	Y	ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y	133	1	**N**
	0	**N**		0			0		ND	1	Y		1	Y
	0	**N**		0		95 to 111	2	Y	ND	1	Y		1	Y
	0	**N**		0			0		ND	1	Y		1	Y

Contents

Detects in Lab Blanks

SDG	Lab_Report_Number	Matrix_Type	SampleCode	Sampled_Date-Time	Sample_Type	Compound	Prefix	Result	Extraction_Date
546369	546369	WATER	METHODBLANK_2_546369	16-05-17	MB	Lead (filtered)		0.001 MG/L	23-05-17

Field Blanks (WATER)
Filter: ALL

SDG	544088	544088	546369
Field ID	RB20170428	TB20170428	TB20170516
Sampled_Date/Time	28-04-17	28-04-17	16-05-17
Sample Type	Rinsate	Trip_B	Trip_B

Chem_Group	ChemName	Units	EQL			
BTEX	Benzene	mg/l	0.001	<0.001	<0.001	<0.001
	Ethylbenzene	mg/l	0.001	<0.001	<0.001	<0.001
	Toluene	mg/l	0.001	<0.001	<0.001	<0.001
	Xylene (o)	mg/l	0.001	<0.001	<0.001	<0.001
	Xylene (m & p)	mg/l	0.002	<0.002	<0.002	<0.002
	Xylene (Total)	mg/l	0.003	<0.003	<0.003	<0.003
Herbicides & Fungicides	Dinoseb	mg/l	0.1	<0.1		
Metals & Metalloids	Arsenic (Total)	mg/l	0.001	<0.001		
	Arsenic (Total) (Filtered)	mg/l	0.001			
	Cadmium	mg/l	0.0002	<0.0002		
	Cadmium (Filtered)	mg/l	0.0001			
	Chromium (Total)	mg/l	0.001	<0.001		
	Chromium (Total) (Filtered)	mg/l	0.001			
	Copper	mg/l	0.001	**0.002**		
	Copper (Filtered)	mg/l	0.001			
	Lead	mg/l	0.001	<0.001		
	Lead (Filtered)	mg/l	0.001			
	Mercury (Inorganic)	mg/l	0.0001	<0.0001		
	Mercury (Inorganic) (Filtered)	mg/l	0.00005			
	Nickel	mg/l	0.001	<0.001		
	Nickel (Filtered)	mg/l	0.001			
	Zinc	mg/l	0.005	<0.005		
	Zinc (Filtered)	mg/l	0.001			
Organochlorine Pesticides	Pentachlorophenol	mg/l	0.01	<0.01		
PAHs in Water	Benzo(b,j+k)fluoranthene	µg/L	2			
Phenols	2,4,5-trichlorophenol	mg/l	0.001	<0.001		
	2,4,6-trichlorophenol	mg/l	0.01	<0.01		
	2,4-dichlorophenol	mg/l	0.001	<0.001		
	2,4-dimethylphenol	mg/l	0.001	<0.001		
	2,4-dinitrophenol	mg/l	0.001	<0.001		
	2,6-dichlorophenol	mg/l	0.003	<0.003		
	2-chlorophenol	mg/l	0.003	<0.003		
	2-Methylphenol	mg/l	0.003	<0.003		
	2-nitrophenol	mg/l	0.005	<0.005		
	3- & 4-Methylphenol	mg/l	0.006	<0.006		
	4,6-Dinitro-2-methylphenol	mg/l	0.005	<0.005		
	4,6-Dinitro-o-cyclohexyl phenol	mg/l	0.1	<0.1		
	4-Chloro-3-Methylphenol	mg/l	0.01	<0.01		
	4-nitrophenol	mg/l	0.001	<0.001		
	Phenol	mg/l	0.003	<0.003		
	Phenols (Total)	mg/l	0.05			
	Total Halogenated Phenol	mg/l	0.01	<0.01		
	Total Non-Halogenated Phenol	mg/l	0.1	<0.1		
	Total Tetrachlorophenols	mg/l	0.03	<0.03		
Polychlorinated Biphenyls	Aroclor 1016	mg/l	0.005	<0.005		
	Aroclor 1221	mg/l	0.001	<0.001		
	Aroclor 1232	mg/l	0.005	<0.005		
	Aroclor 1242	mg/l	0.005	<0.005		
	Aroclor 1248	mg/l	0.005	<0.005		
	Aroclor 1254	mg/l	0.005	<0.005		
	Aroclor 1260	mg/l	0.005	<0.005		
	PCBs (Total)	mg/l	0.001	<0.001		
Polycyclic Aromatic Hydrocarbons	Acenaphthene	mg/l	0.001	<0.001		
	Acenaphthylene	mg/l	0.001	<0.001		
	Anthracene	mg/l	0.001	<0.001		
	Benz(a)anthracene	mg/l	0.001	<0.001		
	Benzo(a)pyrene	mg/l	0.001	<0.001		
	Benzo(a)pyrene TEQ (WHO)	mg/l	0.005			
	Benzo(b,j)fluoranthene	mg/l	0.001	<0.001		
	Benzo(g,h,i)perylene	mg/l	0.001	<0.001		

Field Blanks (WATER)
Filter: ALL

			SDG	544088	544088	546369
			Field ID	RB20170428	TB20170428	TB20170516
			Sampled_Date/Time	28-04-17	28-04-17	16-05-17
			Sample Type	Rinsate	Trip_B	Trip_B
	Benzo(k)fluoranthene	mg/l	0.001	<0.001		
	Chrysene	mg/l	0.001	<0.001		
	Dibenz(a,h)anthracene	mg/l	0.001	<0.001		
	Fluoranthene	mg/l	0.001	<0.001		
	Fluorene	mg/l	0.001	<0.001		
	Indeno(1,2,3-c,d)pyrene	mg/l	0.001	<0.001		
	Naphthalene	mg/l	0.001	<0.01		
	Phenanthrene	mg/l	0.001	<0.001		
	Pyrene	mg/l	0.001	<0.001		
	PAHs (Total)	mg/l	0.001	<0.001		
	Total Positive PAHs	mg/l	0.001			
TPHs (NEPC 1999)	C6-C9 Fraction	mg/l	0.01	<0.02		
	C10-C14 Fraction	mg/l	0.05	<0.05		
	C15-C28 Fraction	mg/l	0.1	<0.1		
	C29-C36 Fraction	mg/l	0.1	<0.1		
	C10-C36 Fraction (Total)	mg/l	0.1	<0.1		
TRHs (NEPC 2013)	>C10-C16 Fraction	mg/l	0.05	<0.05		
	>C16-C34 Fraction	mg/l	0.1	<0.1		
	>C34-C40 Fraction	mg/l	0.1	<0.1		
	>C10-C16 less Naphthalene (F2)	mg/l	0.05	<0.05		
	C6-C10 Fraction	mg/l	0.01	<0.02		
	C6-C10 less BTEX (F1)	mg/l	0.01	<0.02		

Contents

Laboratory Control Samples, Error > 30%

SDG	Matrix_Type	SampleCode	Method_Name
544088	WATER	LCS_12_544088	E008 Speciated Phenols
544088	WATER	LCS_12_544088	USEPA 8270 Semivolatile Organics
544088	WATER	LCS_12_544088	E008 Speciated Phenols
544088	WATER	LCS_12_544088	E008 Speciated Phenols
544088	WATER	LCS_12_544088	E008 Speciated Phenols
544088	WATER	LCS_12_544088	E017 Semivolatile Organic Compounds
544088	WATER	LCS_12_544088	E008 Speciated Phenols
544088	WATER	LCS_12_544088	E008 Speciated Phenols
544088	WATER	LCS_12_544088	NA
544088	WATER	LCS_13_544088	NA
544088	WATER	LCS_13_544088	USEPA 8270 Semivolatile Organics
544088	WATER	LCS_13_544088	NA
546369	WATER	LCS_1_546369	NA
546369	WATER	LCS_1_546369	E008 Speciated Phenols
546369	WATER	LCS_1_546369	E008 Speciated Phenols
546369	WATER	LCS_1_546369	E008 Speciated Phenols
546369	WATER	LCS_1_546369	E008 Speciated Phenols
546369	WATER	LCS_1_546369	E008 Speciated Phenols
546369	WATER	LCS_1_546369	E008 Speciated Phenols
546369	WATER	LCS_1_546369	E008 Speciated Phenols
546369	WATER	LCS_1_546369	E008 Speciated Phenols
546369	WATER	LCS_1_546369	NA
546369	WATER	LCS_2_546369	NA
ENVIROL	WATER	W167217LCS-W1	Org-012 - PAHs in waters and soil

4 MItchell Street Enfield

OriginalChemName	Recovery %	Unit	Result_Type	LCL	UCL	Lab_Comments
2-Nitrophenol	62	%	REG			
2.4-Dinitrophenol	32	%	REG			
2.4.5-Trichlorophenol	51	%	REG			
2.4.6-Trichlorophenol	50	%	REG			
4-Chloro-3-methylphenol	47	%	REG			
4-Nitrophenol	32	%	REG			
Pentachlorophenol	46	%	REG			
Phenol	35	%	REG			
Tetrachlorophenols - Total	48	%	REG			
2-Cyclohexyl-4.6-dinitrophen	50	%	REG			
2-Methyl-4.6-dinitrophenol	31	%	REG			
Dinoseb	54	%	REG			
2-Cyclohexyl-4.6-dinitrophen	32	%	REG			
2-Methylphenol (o-Cresol)	66	%	REG			
2-Nitrophenol	43	%	REG			
2.4.5-Trichlorophenol	39	%	REG			
2.4.6-Trichlorophenol	37	%	REG			
3&4-Methylphenol (m&p-Cre	52	%	REG			
4-Chloro-3-methylphenol	35	%	REG			
Pentachlorophenol	38	%	REG			
Tetrachlorophenols - Total	33	%	REG			
Dinoseb	38	%	REG			
Phenanthrene	131	%	REG			

Contents

Matrix Spike Recoveries less than 70% or greater than 130% or outside lab LCL or UCL

SDG	Lab_Report_Number	Matrix_Type	SampleCode	Field_ID	Depth	Sampled_Date-Time	Method_Name	Compound	Recovery %	Result_Type	LCL	UCL
544088	544088	SOIL	NCP_Ma29656_544088-SPK			28-04-17	E007 Polyaromatic Hydrocarbons (PAH)	Benzo(b&j)fluoranthene	65	SC		
544088	544088	WATER	NCP_Ap23147_544088-SPK			28-04-17	E008 Speciated Phenols	2-Methylphenol (o-Cresol)	64	SC		
544088	544088	WATER	NCP_Ap23147_544088-SPK			28-04-17	E008 Speciated Phenols	2-Nitrophenol	40	SC		
544088	544088	WATER	NCP_Ap23147_544088-SPK			28-04-17	E008 Speciated Phenols	2,4-Dichlorophenol	69	SC		
544088	544088	WATER	NCP_Ap23147_544088-SPK			28-04-17	E017 Semivolatile Organic Compounds (SVO	2,6-Dichlorophenol	53	SC		
544088	544088	WATER	NCP_Ap23147_544088-SPK			28-04-17	E008 Speciated Phenols	3&4-Methylphenol (m&p-Cres	56	SC		
544088	544088	WATER	NCP_Ap23147_544088-SPK			28-04-17	E008 Speciated Phenols	4-Chloro-3-methylphenol	32	SC		

Lab_Comments
The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference

Field Duplicates (SOIL)
Filter: ALL

		SDG	544088	544088		544088	ENVIROLAB 2017-05-01T00:00:00		
		Field ID	BH04_0.4-0.5	QA120170428	**RPD**	BH04_0.4-0.5	QC1		**RPD**
		Sampled Date/Time	28-04-17	28-04-17		28-04-17	28-04-17		
Chem_Gro	**ChemNam**	**Units**	**EQL**						
Metals & M	Arsenic (Tc	mg/kg	2 (Primary): 4 (Interlab)	5.7	4.0	35	5.7	6.0	5
	Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<0.4	0
	Chromium	mg/kg	5 (Primary): 1 (Interlab)	19.0	16.0	17	19.0	21.0	10
	Copper	mg/kg	5 (Primary): 1 (Interlab)	28.0	30.0	7	28.0	24.0	15
	Lead	mg/kg	5 (Primary): 1 (Interlab)	13.0	12.0	8	13.0	12.0	8
	Mercury (In	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	5 (Primary): 1 (Interlab)	36.0	31.0	15	**36.0**	**25.0**	**36**
	Zinc	mg/kg	5 (Primary): 1 (Interlab)	39.0	35.0	11	39.0	32.0	20
etalloids									
TPHs (NEP	C6-C9 Fra	mg/kg	20 (Primary): 25 (Interla	<20.0	<20.0	0	<20.0	<25.0	0
	C10-C14 F	mg/kg	20 (Primary): 50 (Interla	<20.0	<20.0	0	<20.0	<50.0	0
	C15-C28 F	mg/kg	50 (Primary): 100 (Interl	<50.0	<50.0	0	<50.0	<100.0	0
	C29-C36 F	mg/kg	50 (Primary): 100 (Interl	<50.0	<50.0	0	<50.0	<100.0	0
	C10-C36 F	mg/kg	50	<50.0	<50.0	0	<50.0		
PC 1999)									
TRHs (NEP	>C10-C16	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	>C16-C34	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0
	>C34-C40	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0
	>C10-C16	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	C6-C10 Fra	mg/kg	20 (Primary): 25 (Interla	<20.0	<20.0	0	<20.0	<25.0	0
	C6-C10 les	mg/kg	20 (Primary): 25 (Interla	<20.0	<20.0	0	<20.0	<25.0	0
PC 2013)									
BTEX	Benzene	mg/kg	0.1 (Primary): 0.2 (Interl	<0.1	<0.1	0	<0.1	<0.2	0
	Ethylbenze	mg/kg	0.1 (Primary): 1 (Interlab	<0.1	<0.1	0	<0.1	<1.0	0
	Toluene	mg/kg	0.1 (Primary): 0.5 (Interl	<0.1	<0.1	0	<0.1	<0.5	0
	Xylene (o)	mg/kg	0.1 (Primary): 1 (Interlab	<0.1	<0.1	0	<0.1	<1.0	0
	Xylene (m	mg/kg	0.2 (Primary): 2 (Interlab	<0.2	<0.2	0	<0.2	<2.0	0
	Xylene (To	mg/kg	0.3 (Primary): 1 (Interlab	<0.3	<0.3	0	<0.3	<1.0	0
Polycyclic A	Naphthaler	mg/kg	0.5 (Primary): 1 (Interlab	<0.5			<0.5	<1.0	0
	Naphthaler	mg/kg	0.5 (Primary): 1 (Interlab	<0.5	<0.5	0	<0.5	<1.0	0
Aromatic Hydrocarbons									
Other	% Moisture	%	1	18.0	15.0	18	18.0		

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 50 (1-20 x EQL); 30 (20-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in th

Field Duplicates (WATER)
Filter: ALL

	SDG	546369	546369		546369	ENVIROLAB 2017-05-16T00:00:00				
	Field ID	MW01-01	QA1	**RPD**	MW01-01	QC1				**RPD**
	Sampled Date/Time	16-05-17	16-05-17		16-05-17	16-05-17				
Chem_Gro	**ChemNam**	**Units**	**EQL**							
Metals & M	Arsenic (To	mg/l	0.001	<0.01	0.002	0	<0.01	0.005		0
	Cadmium (	mg/l	0.0002 (Primary): 0.0001	<0.002	<0.0002	0	<0.002	<0.0001		0
	Chromium	mg/l	0.001	<0.01	<0.001	0	<0.01	<0.001		0
	Copper (Fil	mg/l	0.001	<0.01	<0.001	0	<0.01	<0.001		0
	Lead (Filter	mg/l	0.001	**0.01**	**<0.001**	**164**	**0.01**	**<0.001**		**164**
	Mercury (In	mg/l	0.0001 (Primary): 0.0000	**0.0008**	**<0.0001**	**156**	**0.0008**	**<0.0001**		**176**
	Nickel (Filte	mg/l	0.001	<0.05	0.007	0	<0.05	0.005		0
	Zinc (Filtere	mg/l	0.005 (Primary): 0.001 (I	<0.05	<0.005	0	<0.05	0.002		0
etalloids										
TPHs (NEP	C6-C9 Frac	mg/l	0.02 (Primary): 0.01 (Inte	<0.02	<0.02	0	<0.02	<0.01		0
	C10-C14 F	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05		0
	C15-C28 F	mg/l	0.1	**<0.1**	**0.2**	**67**	<0.1	<0.1		0
	C29-C36 F	mg/l	0.1	**<0.1**	**0.2**	**67**	<0.1	<0.1		0
	C10-C36 F	mg/l	0.1	**<0.1**	**0.4**	**120**	<0.1			
C 1999)										
TRHs (NEP	>C10-C16	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05		0
	>C16-C34	mg/l	0.1	**<0.1**	**0.5**	**133**	<0.1	<0.1		0
	>C34-C40	mg/l	0.1	<0.1	<0.1	0	<0.1	<0.1		0
	>C10-C16	mg/l	0.05	<0.05	<0.05	0	<0.05	<0.05		0
	C6-C10 Fra	mg/l	0.02 (Primary): 0.01 (Inte	<0.02	<0.02	0	<0.02	<0.01		0
	C6-C10 les	mg/l	0.02 (Primary): 0.01 (Inte	<0.02	<0.02	0	<0.02	<0.01		0
C 2013)										
BTEX	Benzene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Ethylbenze	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Toluene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Xylene (o)	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Xylene (m &	mg/l	0.002	<0.002	<0.002	0	<0.002	<0.002		0
	Xylene (To	mg/l	0.003	<0.003	<0.003	0	<0.003			
Polycyclic A	Acenaphth	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Acenaphth	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Anthracene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Benz(a)ant	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Benzo(a)py	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Benzo(b,j)f	mg/l	0.001	<0.001	<0.001	0	<0.001			
	Benzo(g,h,	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Benzo(k)flu	mg/l	0.001	<0.001	<0.001	0	<0.001			
	Chrysene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Dibenz(a,h	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Fluoranthe	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Fluorene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Indeno(1,2	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Naphthaler	mg/l	0.01 (Primary): 0.001 (In	<0.01	<0.01	0	<0.01	<0.001		0
	Naphthaler	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Phenanthre	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	Pyrene	mg/l	0.001	<0.001	<0.001	0	<0.001	<0.001		0
	PAHs (Tota	mg/l	0.001	<0.001	<0.001	0	<0.001			
romatic Hydrocarbons										
Phenols	2,4,5-trichlo	mg/l	0.001	<0.001	<0.001	0	<0.001			
	2,4,6-trichlo	mg/l	0.01	<0.01	<0.01	0	<0.01			
	2,4-dichloro	mg/l	0.001	<0.001	<0.001	0	<0.001			
	2,4-dimethy	mg/l	0.001	<0.001	<0.001	0	<0.001			
	2,4-dinitrop	mg/l	0.001	<0.001	<0.001	0	<0.001			
	2,6-dichloro	mg/l	0.003	<0.003	<0.003	0	<0.003			
	2-chlorophe	mg/l	0.003	<0.003	<0.003	0	<0.003			
	2-Methylph	mg/l	0.003	<0.003	<0.003	0	<0.003			
	2-nitropher	mg/l	0.005	<0.005	<0.005	0	<0.005			
	3- & 4-Meth	mg/l	0.006	<0.006	<0.006	0	<0.006			
	4,6-Dinitro-	mg/l	0.005	<0.005	<0.005	0	<0.005			
	4,6-Dinitro-	mg/l	0.1	<0.1	<0.1	0	<0.1			
	4-Chloro-3-	mg/l	0.01	<0.01	<0.01	0	<0.01			
	4-nitropher	mg/l	0.001	<0.001	<0.001	0	<0.001			
	Phenol	mg/l	0.003	<0.003	<0.003	0	<0.003			
	Total Halog	mg/l	0.01	<0.01	<0.01	0	<0.01			
	Total Non-H	mg/l	0.1	<0.1	<0.1	0	<0.1			
	Total Tetra	mg/l	0.03	<0.03	<0.03	0	<0.03			
Organochlo	Pentachlor	mg/l	0.01	<0.01	<0.01	0	<0.01			
rine Pesticides										
Herbicides	Dinoseb	mg/l	0.1	<0.1	<0.1	0	<0.1			

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 50 (1-20 x EQL); 30 (20-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to thos

Contents

Laboratory Control Samples, Error > 30%

SDG	Matrix_Type	SampleCode	Method_Name	OriginalChemName	Recovery %	Unit	Result_Type	LCL	UCL	Lab_Comments
544088	WATER	LCS_12_544088	E008 Speciated Phenols	2-Nitrophenol	62	%	REG			
544088	WATER	LCS_12_544088	USEPA 8270 Semivolatile Organics	2.4-Dinitrophenol	32	%	REG			
544088	WATER	LCS_12_544088	E008 Speciated Phenols	2.4.5-Trichlorophenol	51	%	REG			
544088	WATER	LCS_12_544088	E008 Speciated Phenols	2.4.6-Trichlorophenol	50	%	REG			
544088	WATER	LCS_12_544088	E008 Speciated Phenols	4-Chloro-3-methylphenol	47	%	REG			
544088	WATER	LCS_12_544088	E017 Semivolatile Organic Compounds	4-Nitrophenol	32	%	REG			
544088	WATER	LCS_12_544088	E008 Speciated Phenols	Pentachlorophenol	46	%	REG			
544088	WATER	LCS_12_544088	E008 Speciated Phenols	Phenol	35	%	REG			
544088	WATER	LCS_12_544088	NA	Tetrachlorophenols - Total	48	%	REG			
544088	WATER	LCS_13_544088	NA	2-Cyclohexyl-4.6-dinitrophen	50	%	REG			
544088	WATER	LCS_13_544088	USEPA 8270 Semivolatile Organics	2-Methyl-4.6-dinitrophenol	31	%	REG			
544088	WATER	LCS_13_544088	NA	Dinoseb	54	%	REG			
546369	WATER	LCS_1_546369	NA	2-Cyclohexyl-4.6-dinitrophen	32	%	REG			
546369	WATER	LCS_1_546369	E008 Speciated Phenols	2-Methylphenol (o-Cresol)	66	%	REG			
546369	WATER	LCS_1_546369	E008 Speciated Phenols	2-Nitrophenol	43	%	REG			
546369	WATER	LCS_1_546369	E008 Speciated Phenols	2.4.5-Trichlorophenol	39	%	REG			
546369	WATER	LCS_1_546369	E008 Speciated Phenols	2.4.6-Trichlorophenol	37	%	REG			
546369	WATER	LCS_1_546369	E008 Speciated Phenols	3&4-Methylphenol (m&p-Cre	52	%	REG			
546369	WATER	LCS_1_546369	E008 Speciated Phenols	4-Chloro-3-methylphenol	35	%	REG			
546369	WATER	LCS_1_546369	E008 Speciated Phenols	Pentachlorophenol	38	%	REG			
546369	WATER	LCS_1_546369	NA	Tetrachlorophenols - Total	33	%	REG			
546369	WATER	LCS_2_546369	NA	Dinoseb	38	%	REG			
ENVIROL	WATER	W167217LCS-W1	Org-012 - PAHs in waters and soil	Phenanthrene	131	%	REG			

Contents

Trip Spike Recoveries (70% - 130% is acceptable)

SDG	Lab_Report_Number	Matrix_Type	SampleCode	Field_ID	Method_Name
544088	544088	WATER	S17-Ap23246	TS20170428	TRH C6-C40 - LTM-ORG-2010
544088	544088	WATER	S17-Ap23246	TS20170428	TRH C6-C40 - LTM-ORG-2010
544088	544088	WATER	S17-Ap23246	TS20170428	TRH C6-C40 - LTM-ORG-2010
544088	544088	WATER	S17-Ap23246	TS20170428	TRH C6-C40 - LTM-ORG-2010
544088	544088	WATER	S17-Ap23246	TS20170428	TRH C6-C40 - LTM-ORG-2010
544088	544088	WATER	S17-Ap23246	TS20170428	TRH C6-C40 - LTM-ORG-2010
546369	546369	WATER	S17-My15749	TS20170516	TRH C6-C40 - LTM-ORG-2010
546369	546369	WATER	S17-My15749	TS20170516	TRH C6-C40 - LTM-ORG-2010
546369	546369	WATER	S17-My15749	TS20170516	TRH C6-C40 - LTM-ORG-2010
546369	546369	WATER	S17-My15749	TS20170516	TRH C6-C40 - LTM-ORG-2010
546369	546369	WATER	S17-My15749	TS20170516	TRH C6-C40 - LTM-ORG-2010
546369	546369	WATER	S17-My15749	TS20170516	TRH C6-C40 - LTM-ORG-2010

Contents

Surrogate Variation > 30% or outside lab LCL or UCL

SDG	Expr1001	Lab_Report_Number	Sample_Type	Matrix_Type	SampleCode	Field_ID	Depth	Sampled_Date-Time	Compound	Recovery %	Unit	LCL	UCL
548234	548234	548234	Normal	SOIL	S17-My28379	BH06_0.2-0.3	0.2 - 0.3	28-04-17	4-Bromofluorobenzene (surr.)	60	%	70	130
544088	544088	544088	Normal	SOIL	S17-Ap23237	BH04_0.4-0.5	0.4 - 0.5	28-04-17	4-Bromofluorobenzene (surr.)	68	%	70	130
544088	544088	544088	Normal	SOIL	S17-Ap23237	BH04_0.4-0.5	0.4 - 0.5	28-04-17	Dibutylchlorendate (surr.)	52	%	70	130
544088	544088	544088	Normal	SOIL	S17-Ap23237	BH04_0.4-0.5	0.4 - 0.5	28-04-17	Phenol-d6 (surr.)	66	%	20	130
544088	544088	544088	Normal	SOIL	S17-Ap23241	BH09_0.4-0.5	0.4 - 0.5	28-04-17	4-Bromofluorobenzene (surr.)	62	%	70	130
544088	544088	544088	Normal	SOIL	S17-Ap23241	BH09_0.4-0.5	0.4 - 0.5	28-04-17	Dibutylchlorendate (surr.)	58	%	70	130
544088	544088	544088	Normal	SOIL	S17-Ap23242	BH10_0.0-0.1	0 - 0.1	28-04-17	Dibutylchlorendate (surr.)	56	%	70	130
544088	544088	544088	Normal	SOIL	S17-Ap23242	BH10_0.0-0.1	0 - 0.1	28-04-17	4-Bromofluorobenzene (surr.)	68	%	70	130
544088	544088	544088	Rinsate	WATER	S17-Ap23244	RB20170428		28-04-17	2-Fluorobiphenyl (surr.)	51	%	30	130
544088	544088	544088	Rinsate	WATER	S17-Ap23244	RB20170428		28-04-17	Tetrachloro-m-xylene (surr.)	1	%	70	130
546369	546369	546369	Normal	WATER	S17-My15744	MW01-01	MW01-01	16-05-17	p-Terphenyl-d14 (surr.)	64	%	30	130
546369	546369	546369	Normal	WATER	S17-My15745	MW02-01	MW02-01	16-05-17	2-Fluorobiphenyl (surr.)	57	%	30	130
546369	546369	546369	Normal	WATER	S17-My15746	MW03-01	MW03-01	16-05-17	p-Terphenyl-d14 (surr.)	65	%	30	130
546369	546369	546369	Normal	WATER	S17-My15747	MW04-01	MW04-01	16-05-17	p-Terphenyl-d14 (surr.)	69	%	30	130
546369	546369	546369	Field_D	WATER	S17-My15754	QA1	MW01-01	16-05-17	2-Fluorobiphenyl (surr.)	51	%	30	130
546369	546369	546369	Field_D	WATER	S17-My15754	QA1	MW01-01	16-05-17	p-Terphenyl-d14 (surr.)	53	%	30	130

Compound	Trip_Spike_Result	Trip_Spike_Control	Result_Units	Spike_Recovery_%	Acceptable	Result_Type
Benzene	NA	NA	NA	95	Y	REG
Ethylbenzene	NA	NA	NA	87	Y	REG
m&p-Xylenes	NA	NA	NA	90	Y	REG
o-Xylene	NA	NA	NA	87	Y	REG
Toluene	NA	NA	NA	88	Y	REG
Xylenes - Total	NA	NA	NA	89	Y	REG
Benzene	NA	NA	NA	102	Y	REG
Ethylbenzene	NA	NA	NA	83	Y	REG
m&p-Xylenes	NA	NA	NA	90	Y	REG
o-Xylene	NA	NA	NA	95	Y	REG
Toluene	NA	NA	NA	88	Y	REG
Xylenes - Total	NA	NA	NA	92	Y	REG

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