Detailed Site Investigation Report – Ridge Street (WP12)

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Important note about your report

The sole purpose of this report is to present the findings of a detailed site investigation carried out by Jacobs for the Sydney Program Alliance (SPA) within the construction footprint of the proposed ancillary support site at Ridge Street, North Sydney NSW, as part of the Warringah Freeway Upgrade (WP12).

All reports and conclusions that deal with sub-surface conditions are based on interpretation and judgement and as a result have uncertainty attached to them. You should be aware that this report contains interpretations and conclusions which are uncertain, due to the nature of the investigations. No study can investigate every risk, and even a rigorous assessment and/or sampling programme may not detect all problem areas within a site.

This report is based on assumptions that the site conditions as revealed through sampling and information provided by SPA are indicative of conditions throughout the site. The findings are the result of standard assessment techniques used in accordance with normal practices and standards, and (to the best of Jacobs' knowledge) they represent a reasonable interpretation of the current conditions on the site.

Sampling techniques, by definition, cannot determine the conditions between the sample points and so this report cannot be taken to be a full representation of the sub-surface conditions. This report only provides an indication of the likely sub surface conditions.

Conditions encountered when site work commences may be different from those inferred in this report, for the reasons explained in this limitation statement. If site conditions encountered during site works are different from those encountered during Jacobs' site investigation, Jacobs reserves the right to revise any of the findings, observations and conclusions expressed in this report.

The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report.

In preparing this report, Jacobs has relied upon, and presumed accurate, information provided by the SPA and from other sources. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. The reliance on provided information is governed by the specific limitations as detailed in the respective information sources. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

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Executive summary

Jacobs Group (Australia) Pty Ltd (Jacobs) undertook assessment of potential contamination for the Sydney Program Alliance (SPA) within the footprint of the proposed minor ancillary support site on Ridge Street (St Leonards Park), North Sydney NSW (referred to hereinafter as the site).

To address the *Western Harbour Tunnel and Warringah Freeway Upgrade (SSI-8863)* conditions of approval, a Detailed Site Investigation (DSI) report was required to be undertaken at the proposed minor ancillary support site to be established as part of work package 12 (WP12).

The area to be occupied by the proposed minor ancillary support site was identified as having a moderate contamination potential based on the information detailed in Appendix M: Contamination of the Environmental Impact Statement, January 2020 (EIS Appendix M, 2020) prepared for the Western Harbour Tunnel and Warringah Freeway Upgrade project.

Jacobs undertook an evaluation of the assessment work previously completed by SMEC (as reported in 28 October 2020), and the guidelines relevant to the assessment of contamination at the site (i.e. the EIS, and published guidelines relevant to the assessment). This review identified data gaps requiring further assessment. Jacobs undertook further assessment (site investigation, sampling and analysis) to address these data gaps so that the combined Jacobs and SMEC data set met the requirements of the EIS, published guidelines and addressed the conditions of approval.

The following conclusions and recommendations were made based on the scope/limitations of the combined SMEC/Jacobs assessment:

Conclusions

- Reported contaminant concentrations in soil were below the adopted guideline values (for all individual sample results).
- Inert building waste and debris was noted as several locations within fill material across the site.
- Asbestos was not identified by the laboratory in any of the samples submitted for asbestos identification. Asbestos containing materials were not observed by Jacobs while collecting the soil samples.

Recommendations

- Given the presence of other building waste/debris (and the heterogeneous nature of such waste), there is a potential for undiscovered soil contamination and/or asbestos containing materials to also be present. Jacobs do not recommend further assessment of the site, however, the potential for undiscovered soil contamination and/or asbestos containing materials to be present within the subsurface should be noted within the Construction and Environmental Management Plan (including an unexpected finds procedure).
- The site management plan should also ensure that any disturbance of the site surface is managed appropriately (including off-site disposal). For example, minimise dust generation, surface water/sediment runoff from the site, etc.).

1 Introduction

Jacobs Group (Australia) Pty Ltd (Jacobs) undertook assessment of potential contamination for the Sydney Program Alliance (SPA) within the footprint of the proposed minor ancillary support site on Ridge Street (St Leonards Park), North Sydney NSW (referred to hereinafter as the site). The purpose of this work is summarised below.

Aspect	Comment
Propose site use	Proposed ancillary support site to be used by contractors and other project personnel during the construction works of the Warringah Freeway Upgrades (WFU).
Duration of site use	Less than 5 years.
Why is this work being undertaken	The area to be occupied by the proposed ancillary support site was identified as having a moderate contamination potential based on the information detailed in Appendix M: Contamination of the Environmental Impact Statement, January 2020 (EIS Appendix M, 2020) prepared for the Western Harbour Tunnel and Warringah Freeway Upgrade project. Subsequently the *Western Harbour Tunnel and Warringah Freeway Upgrade (SSI-8863)* included an approval condition requiring a Detailed Site Investigation (DSI) report.
Previous assessment works	SMEC had previously undertaken a soil contamination assessment for the WFU which also covered the site *'Provision of Warringah Freeway Contamination Investigation Services'* – Contamination Factual Report (SMEC, October 2020).
Jacobs review	The Jacobs review identified several data gaps (with respect to published guidelines and the EIS) requiring the collection of additional data.
Additional data collection	Jacobs collected additional data to address the data gaps.
Evaluation of soil contamination data	The combined SMEC and Jacobs contamination data was used to evaluate the significance of contamination. The published soil quality guideline values for a commercial/industrial land use (as per National Environment Protection (Assessment of Site Contamination) Measure 1999, revised 2013 (NEPC, 2013)) were used to evaluate the significance of contamination. The commercial/industrial guidelines were the most relevant exposure scenario for the proposed site use. However, we note that the published guideline values are based on a much longer exposure period (i.e. 30 years). Therefore, direct application of the published NEPC (2013) guidelines to the proposed site exposure was conservative.
Key exclusions	Ecological receptors were not relevant for the proposed occupation of the site for the purposes of construction activities since: • The majority of existing vegetation at the site will be removed during the construction/occupation period. • The proposed use of the site as a construction support site will have minimal landscaping opportunities. • The site is located within a heavily urbanised area and soils beneath the investigation area are unlikely to represent a sensitive terrestrial ecosystem that requires protection. • The site will not be used for growing produce (e.g. fruit and vegetables) the construction/occupation period.

	The investigation only targeted soils within the footprint of the proposed construction support site (as per the EIS Appendix M, 2020). The rationale for not targeting other media is provided below: • Should soil contamination be identified (i.e. above concentrations for commercial/industrial land use), recommendations for additional investigations and/or remedial measures for air, hazardous ground gases, surface water, groundwater, soil vapour, separate phase contaminants, sediments, infrastructure (e.g. concrete), biota and dust would be provided (if considered relevant). • No receiving surface water bodies are located on and/or adjacent to the site. • Groundwater is not anticipated to be intersected (i.e. no contact with construction workers, no extraction to support construction) as part of the proposed works. The assessment of asbestos was primarily based on visual observation with limited laboratory analysis. Note that this investigation does not constitute full characterisation of the site for the potential presence of asbestos nor does the results of this investigation represent an 'asbestos clearance'.

2 Background

The following provides background information with respect to contamination at the site.

Appendix M of the EIS (2020) prepared for the Western Harbour Tunnel and Warringah Freeway Upgrade project detailed the following with respect to contamination at the proposed Ridge Street minor ancillary support site.

Site	*Location relative to alignment*	*Construction element and anticipated depth*	*Potential contamination source*	*Potential contamination distribution*	*Potential contaminants*	*Risk ranking*
St Leonards Park bordering Warringah Freeway (between Ridge Street and Falcon Street), North Sydney	*Within footprint of construction support site and surface works*	*Ridge Street north construction support site (WHT9) and Warringah Freeway Upgrade surface work (surface)*	*Deposition of particulate matter and filling*	*Surface and depth (potentially 0-2 m)*	*Heavy metals, hydrocarbons, pesticides, PCB, nutrients, cyanide, VOC, asbestos, PFAS*	*Moderate* • *Possible contamination* • *Excavation activities within site footprint* • *Excavation activities within potential contamination distribution range (laterally and vertically – surface work only)* • *Potential contamination distribution unlikely to impact upon tunnelling (based on depth to tunnel).*

It should be noted that the inclusion of PFAS was determined by the potential for PFAS to be present in fill from unknown sources to have been used at the site (as detailed in Appendix M of the EIS) and not associated with specific point PFAS sources on the site (e.g. use of AFFF on historical fires on the site).

SMEC were commissioned by TfNSW to undertake a larger contamination investigation within and adjacent to the Warringah Freeway which also included areas to be occupied by the proposed ancillary support site. The following summary should be read in conjunction with the SMEC (2020) report.

The objective of the SMEC (2020) investigation was to collect and provide factual data to TfNSW for the purpose of informing prospective tenderers of the project of the contamination and geotechnical conditions along the proposed WFU alignment.

The following investigation works were undertaken by SMEC at the site:

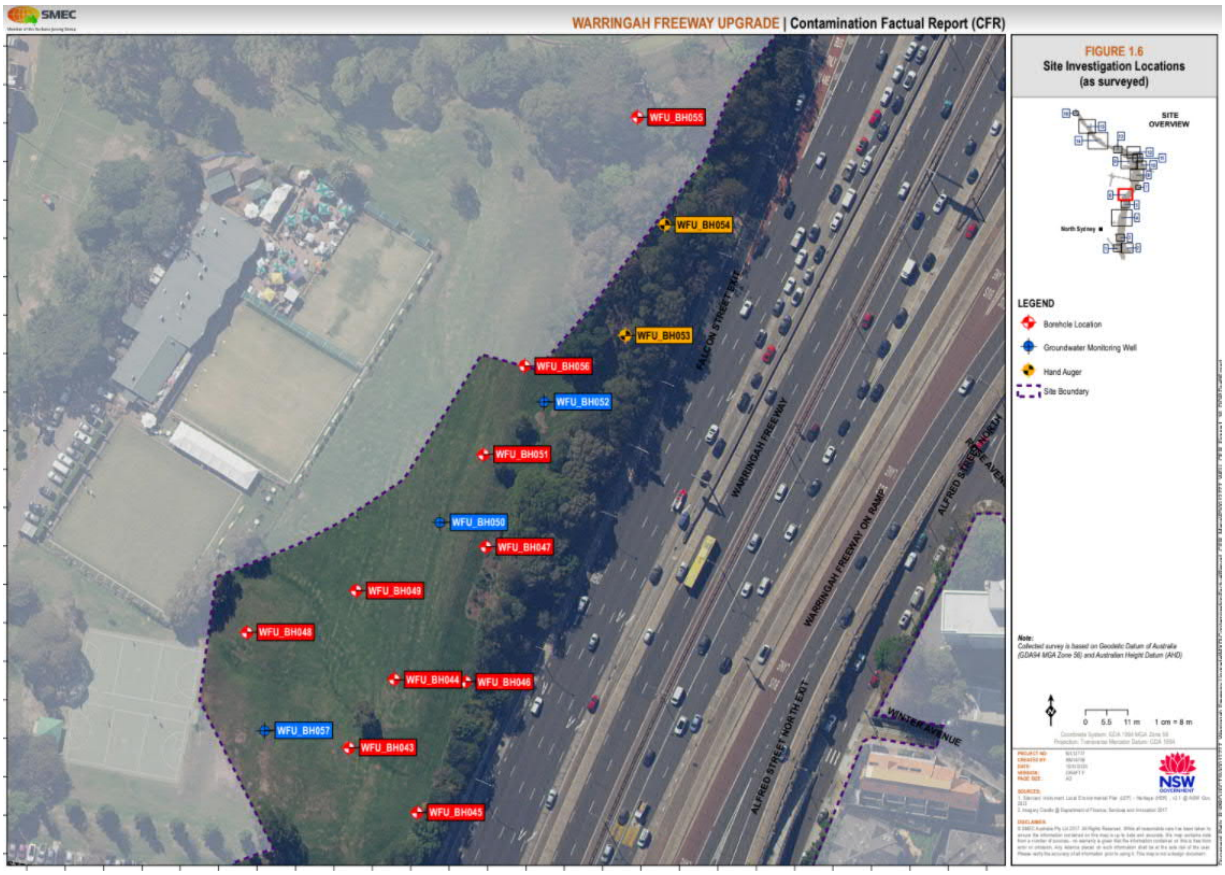
- Soil sampling from 12 investigation locations (WFU_BH043 to WFU_BH052, WFU_BH056 and WFU_BH057) within the proposed construction footprint and three locations immediately adjacent to the construction footprint (WFU_BH053, WFU_BH054 and WFU_ BH055). All soil investigation locations were drilled to a maximum depth of 4.1 metres below ground level (mbgl) with WFU_BH050, WFU_BH052 and WFU_BH057 drilled to a maximum depth of 20.2 mbgl to facilitate the installation of a groundwater wells. All locations were drilled to intersection with natural materials (maximum fill depth of 4.4 mbgl at location WFU_BH050) with the exception of WFU_BH046 which refused on concrete at a depth of 2.2 mbgl.

- Three groundwater wells were also installed (WFU_BH050, WFU_BH052 and WFU_BH057) and sampled.

No further discussion on groundwater quality is provided as groundwater is not anticipated to be intersected (i.e. no contact with construction workers, no groundwater extraction to support construction) as part of the proposed works (refer to the key exclusions detailed in Section 1 and the assumptions and limitations noted in Section 3).

Sample locations undertaken as part of the SMEC (2020) investigation (locations on the site and in adjacent areas) are presented on **Figure 2-1**.

Figure 2-1: SMEC (2020) investigation locations (figure sourced from the SMEC, 2020)



3 Objectives and scope of works

3.1 Objectives

The objectives of the DSI was to provide responses to the risk management strategy detailed in Appendix M of the EIS (2020) and the conditions of approval from the Western Harbour Tunnel and Warringah Freeway Upgrade (SSI-8863). These conditions (and responses) are provided in Section 12 of this report)

To address these conditions, Jacobs reviewed existing information and developed a scope of work to address data gaps relevant to the proposed use of the site as a temporary ancillary support site. Key aspects for framing this scope were:

- An environmental management plan will be developed for all construction related activities (including the ancillary support areas). This plan will include soil management protocols and unexpected finds procedures.
- The ancillary support site was to be used primarily for construction support activities e.g. temporary site shed, vehicle parking, laydown areas for equipment/supplies, etc.
- Incidental excavation or soil movement (i.e. to install temporary services, level areas for vehicle access) maybe required, however, bulk excavation (with the exception of achieving site levels) was generally not required.
- Occupation/use of the site was to be consistent with a construction work site (e.g. 8 hours per day, 6 days per week).
- The duration of occupation for construction workers was likely to be less than 5 years.
- All workers occupying the site(s) will be inducted into the safety and environment procedures relevant to works involving contact with potentially contaminated soils.
- No permanent structure would be built within the investigation areas during the proposed use for ancillary support activities.
- To facilitate the proposed use of the site most of the surface vegetation would be cleared (except for significant trees, where present).

3.2 Scope of works

The scope of works undertaken by Jacobs is detailed below:

- Undertake a review of the SMEC (2020) investigation to assess potential data gaps in the assessment (with reference to the EIS, and published guidelines relevant to the assessment objective (as noted above)).
- Undertake an intrusive investigation at the site to address identified data gaps.
- Preparation of this report.

Note that the Jacobs assessment (and the SMEC assessment) were conducted on the site prior to the establishment/occupation of the site for construction purposes. Therefore, any disturbance of the soil and or subsurface excavation should consider this report and the appropriate management of soils.

With respect to the scope of this assessment, the following assumptions and limitations are relevant:

- Assessment of potential contaminants was limited to the potential contaminants of concern identified in the EIS relevant to this area.
- Consideration of the potential impact to the health of construction workers was the primary focus of this assessment.
- Soil data was the most relevant media for exposure by construction workers. Therefore, collection of near surface (i.e. 1m to 2m depth) soil data was the focus of the assessment. Other exposure pathways (e.g. contact/drinking groundwater, indoor vapour inhalation of soil vapour) were considered highly unlikely to occur given the proposed used of the site and the implementation of an environmental/soil management plan.
- The assessment of asbestos was primarily based on visual observation with limited laboratory analysis. Note that this investigation does not constitute full characterisation of the site for the potential presence of asbestos nor does the results of this investigation represent an 'asbestos clearance'.
- Where the magnitude and/or potential extent of contamination was unclear (following this assessment), Jacobs have recommended conservative soil management measures as a precaution.
- This assessment was not designed to provide in-situ classification of soils for off-site disposal. In the event that off-site disposal of soils is required, EPA guidelines with respect to off-site soil appropriate classification/disposal will need to be considered.
- Ecological receptors were not relevant for the proposed occupation of the site for the purposes of construction activities since:
    - The majority of existing vegetation at the site will be removed during the construction/occupation period.
    - The proposed use of the site as an ancillary support site will have minimal landscaping opportunities.
    - The site is located within a heavily urbanised area and soils beneath the investigation area are unlikely to represent a sensitive terrestrial ecosystem that requires protection.
    - The site will not be used for growing produce (e.g. fruit and vegetables) the construction/occupation period.

4 Site description

The site is located at Ridge Street in the south eastern portion of St Leonards Park, North Sydney NSW.

At the time of undertaking this assessment, the site was located within a public park adjacent to the Warringah Freeway The site was operating as a public off-lead dog park comprising grassed areas with scattered trees. The site consisted of undulating grassed mounds and a steep grassed embankment to the east, sloping towards the Warringah Freeway. The site was bound by Ridge Street and associated parking bays to the south, St Leonards Park Basketball Courts and The Greens North Sydney to the west, Bon Andrews Oval to the north and Warringah Freeway to the east. At the time of undertaking the assessment, no works associated with the construction of the proposed minor ancillary support site had commenced on the site.

The site slopes in a general north to south direction towards Lavender Bay, with a steep embankment to the east towards Warringah Freeway. Ground cover on the site was predominately grass with several large trees bordering the site to the east and north.

The extent of the proposed minor ancillary support site is approximately 7,000m^2. The proposed extent of the proposed minor ancillary support site is presented on **Figure 4-1**.

Figure 4-1: Proposed minor ancillary support site extent

5 Information review

Jacobs reviewed the SMEC (2020) investigation to assess potential data gaps which were required to meet the objectives of the DSI.

Based on this review, the investigation strategy adopted to supplement the SMEC (2020) data and meet the objectives of the DSI are detailed in **Table 5-1.**

Table 5-1: Information review and proposed investigation strategy

Aspect	Reference	SMEC (2020) investigation	Jacobs DSI scope
Number and location of soil borehole locations	NSW EPA (1995) Sampling Design Guidelines recommends a minimum of 17 grid-based locations for the site size (approximate construction footprint of 7,000m^2).	12 locations within and three locations directly adjacent to the construction footprint.	Five additional locations.
Sample depth	The EIS refers to 'surface deposition' as the likely source of contamination.	All soil investigation (with the exception of one location) were drilled to intersection with natural materials. The maximum fill depth encountered was 4.4 mbgl. Three boreholes were drilled to a maximum depth of 20.2 mbgl to facilitate the installation of a groundwater wells.	As noted in Section 3, the Jacobs assessment has considered near surface soils (to approximately 1 m depth). This is inclusive of surface soils. The majority of the SMEC (2020) investigation locations (two locations were terminated prior to 2 mbgl on natural material).
Sample analysis	Appendix M EIS (2020) identified the potential contaminants of concern for the site including heavy metals, Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), PAH, pesticides, Polychlorinated Biphenyls (PCB), nutrients, cyanide, volatile organic compounds (VOC), asbestos, PFAS	Heavy metals, Total Recoverable Hydrocarbons (TRH), Benzene, Toluene, Ethylbenzene, Xylenes (BTEX), PAH, pesticides, Polychlorinated Biphenyls (PCB), asbestos.	The analytical schedule adopted by SMEC (2020) did not include nutrients, cyanide, VOC, PFAS as detailed in Appendix M of the EIS (2020). Jacobs analytical schedule included the potential contaminants of concern as identified in the WHTWFU EIS including heavy metals, TRH, BTEX, PAH, pesticides (OCP), PCB, VOC, PFAS, cyanide and asbestos. Nutrient analysis was not undertaken as these compounds are only likely to be a concern if groundwater is intersected as part of the construction.
Frequency of sample analysis	Not applicable	Two samples were analysed per borehole	Two samples to be analysed per borehole.

6 Site investigation

The following information details the fieldworks undertaken during the Jacobs investigation. It should be reiterated that the Jacobs investigation is supplementary to the information contained in the SMEC (2020) investigation and attempts to fill data gaps to:

- Meet the minimum sampling points as detailed in the NSW EPA (1995) guidelines.
- Provide lateral and vertical coverage of the proposed construction extents.
- Assess the potential for contamination of the site as detailed in Appendix M: Contamination of the Environmental Impact Statement, January 2020 (EIS Appendix M, 2020).

6.1 General overview

The fieldwork for the investigation was undertaken on 24 February 2021. The investigation was undertaken by a contaminated site consultant from Jacobs who was responsible for undertaking the work, site observations, excavation logging and sample collection.

6.2 Soil investigation

Five locations (BH01, BH02, BH03, BH04, and BH05) were excavated using decontaminated hand tools (hand auger and crowbar) to 1.0 mbgl.

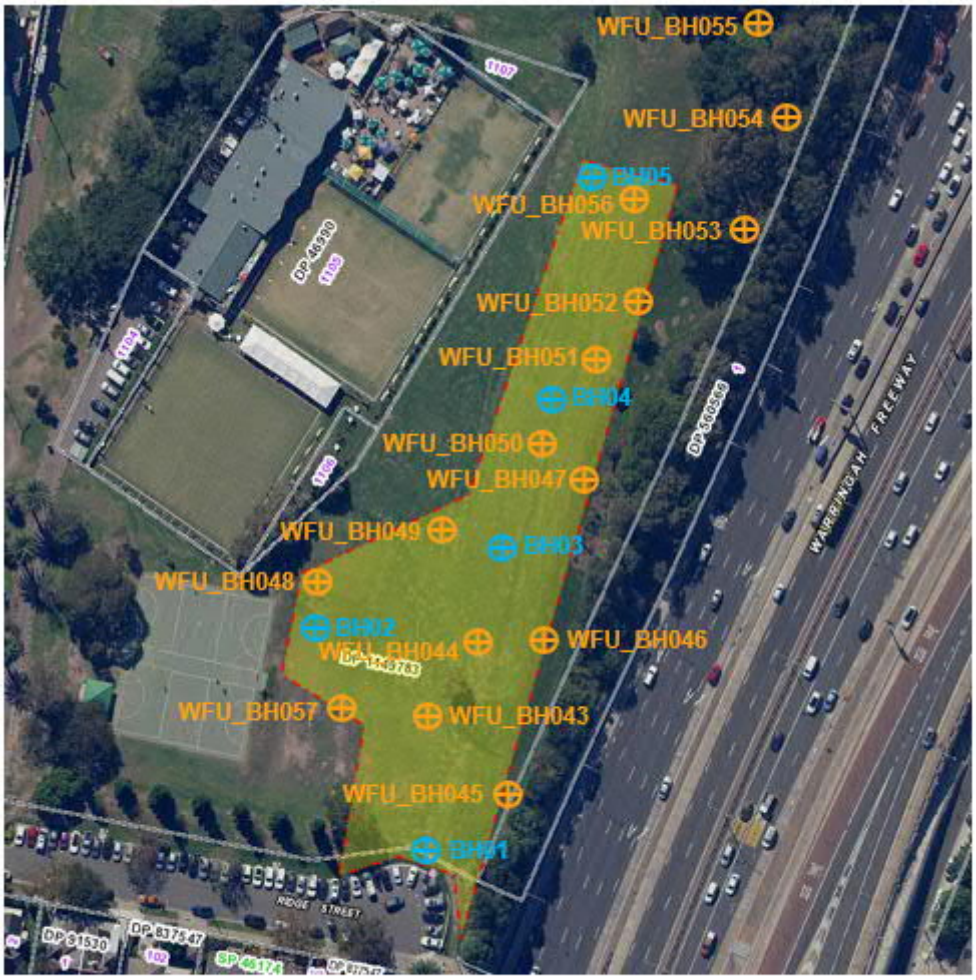
A total of 17 investigations locations (12 locations by SMEC and five locations by Jacobs) is equal to the minimum sampling points required for site characterisation based on detecting circular hot spots by using a systematic sampling pattern as detailed in the NSW EPA (1995) Contaminated Sites – Sampling Design Guidelines for a site of approximately 7,000m^2.

The majority of the investigation locations undertaken by SMEC (2020) were drilled to depths beyond the proposed depth of excavation works for the site to establish the construction facility (i.e. 2 mbgl) and the potential contamination distribution (i.e. 2 mbgl) as detailed in the EIS Appendix M (2020). Two investigation locations undertaken by SMEC (2020) were terminated in natural materials above 2 mbgl.

Three of the SMEC investigation locations (WFU_BH053, WFU_BH054 and WFU_ BH055) were located adjacent to the northern boundary of the construction footprint. The contamination mechanism for the site (as detailed in the EIS) was particulate deposition which is likely to result in diffuse contamination distribution (i.e. relatively low levels of contamination spread across large areas). These three investigations locations are also likely to be representative of the contamination mechanism across the areas of the park adjacent to the Warringah Freeway (considering the diffuse nature of particulate deposition) and have been used to further assess the potential for contamination across the construction footprints.

The approximate investigation locations undertaken by SMEC (2020) and Jacobs are presented on **Figure 6-1**.

Figure 6-1: Approximate investigation locations



6.3 Depth intervals of sampling

Selected soil samples were collected from the investigation locations at the surface (0.0-0.1m) and at depths of 0.25 mbgl, 0.5 mbgl and 1.0 mbgl.

6.4 Method of sample collection

All soil samples were collected as grab samples from below the surface of the grass and from a decontaminated hand auger at depth. Samples were transferred to sample containers by Jacobs field staff by hand using disposable nitrile gloves. New nitrile gloves were used for the collection of each sample.

Care was taken to ensure that representative samples were obtained from the depth required and that the integrity was maintained, which is particularly important when dealing with potentially volatile components.

6.5 Sample containers, method of sample storage and handling

All soil samples were placed in jars provided by the primary laboratory Envirolab Services (Envirolab). Samples required for per- and polyfluoroalkyl substances (PFAS) analysis were placed in laboratory-provided specific PFAS jars. The jars were completely filled with soil, labelled with the date, unique sampling point identification and sampler information.

The soil jars, once filled with sample and sealed, were immediately placed in an esky / cool box in which ice had been added. At the end of the sampling program the samples in the esky / cool box were transported to the primary laboratory. Custody seals were placed on the esky / cool box for delivery to the laboratory.

An inter-laboratory duplicate was sent to the secondary laboratory, Eurofins Scientific (Eurofins).

6.6 Decontamination procedures

The hand auger and crowbar were decontaminated between sample locations by washing with a solution of phosphate free, PFAS free, laboratory grade detergent (Liquinox) and potable water and rinsed with potable water.

6.7 Sample logging

Experienced Jacobs field staff completed soil logs for the excavation locations. The logs recorded the following data:

- Sample number and depth.
- Soil classification, colour, consistency or density, moisture content and obvious indications of contamination.
- Depth of excavation.
- Excavation refusal.
- Method of excavation.

6.8 Laboratory analysis

Soil samples were selected for laboratory analysis based the potential contaminants for the site as detailed in the EIS Appendix M (2020). A summary of the laboratory testing undertaken is detailed in **Table 6-1.**

Table 6-1: Laboratory testing

Laboratory Test	Quantity
Heavy metals (As, Cd, Cr, Cu, Pb, Ni, Hg, Zn),	10 primary and 2 QAQC
Hydrocarbon compounds (TRH, BTEX, PAH)	10 primary and 2 QAQC
OCP	10 primary and 2 QAQC
Cyanide	10 primary and 2 QAQC
PCB	10 primary and 2 QAQC

Laboratory Test	Quantity
Volatile Organic Compounds (VOC)	10 primary and 2 QAQC
PFAS	10 primary
Asbestos (presence/absence)	10 primary and 2 QAQC

6.9 Analytical parameters and methods

Jacobs commissioned Envirolab and Eurofins as the primary and secondary laboratories respectively. Both laboratories are National Association of Testing Authorities (NATA) accredited for the testing undertaken.

Where appropriate, the soil samples were analysed in accordance with NEPC National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended 2013 (NEPC, 2013) guidelines using methods based on US Environment Protection Agency (US EPA) and American Public Health Association (APHA) approved analytical methods.

7 Quality control plan

Field and laboratory QA/QC requirements compliant with NEPC (2013) requirements (where applicable) were undertaken as part of the fieldwork program as outlined below.

7.1 Field QA/QC program

Field QA/QC for this project consisted of the collection of two blind replicate samples (QAQC1 and QAQC2).

7.1.1 Environmental samples

Environmental samples or field samples were the representative soil samples collected for analysis to determine aspects of their chemical composition.

7.1.2 Blind replicate sample

A blind replicate sample was provided by the collection of two environmental samples from the same location. These samples were preserved, stored, transported, prepared and analysed in an identical manner. As a minimum, the results of analyses on the blind replicate sample pairs were assessed by calculating the Relative Percentage Differences (RPDs) between the results. The RPD was calculated as the difference between the results divided by their mean value and expressed as a percentage. If the RPD exceeded the value adopted for any analytes, additional investigation would be required, or justification provided for not conducting additional investigation.

Blind replicate samples should be collected at a rate of one duplicate for every 20 environmental samples in accordance with AS 4482.1-2005 *Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds* (AS 4482.1-2005).

7.1.3 Blind triplicate sample

A blind triplicate sample was provided by the collection of two environmental samples from the same location. These samples were preserved, stored, transported, prepared and analysed in an identical manner. One of the samples was transported to a secondary laboratory for analysis. As a minimum, the results of analyses on the blind triplicate sample pairs were assessed by calculating the Relative Percentage Differences (RPDs) between the results. The RPD was calculated as the difference between the results divided by their mean value and expressed as a percentage. If the RPD exceeded the value adopted for any analytes, additional investigation would be required, or justification provided for not conducting additional investigation.

Blind triplicate samples should be collected at a rate of one duplicate for every 20 environmental samples in accordance with AS 4482.1-2005.

7.2 Laboratory QA/QC programme

The reliability of test results from the analytical laboratories was monitored according to the QA/QC procedures used by the NATA accredited laboratory. The QA/QC program employed by Envirolab (the primary laboratory) and Eurofins (the secondary laboratory) specified holding times, extraction dates, method descriptions, CoC requirements, analysis, laboratory levels of reporting (LORs) and acceptance criteria for the results. Laboratory QA/QC requirements undertaken by Envirolab and Eurofins are based on NEPC (2013) requirements and are outlined below.

7.2.1 Laboratory duplicate samples

Laboratory duplicates provided data on analytical precision for each batch of samples.

Laboratory duplicates were performed at a rate of one duplicate for batches of 8-10 samples with an additional duplicate for each subsequent ten samples.

7.2.2 Laboratory control samples

Laboratory control samples consisted of a clean matrix (de-ionised water or clean sand) spiked with a known concentration of the analyte being measured. These samples monitored method recovery in clean samples and were used (where required) to evaluate matrix interference by comparison with matrix spikes.

7.2.3 Surrogates

For organic analyses, a surrogate was added at the extraction stage in order to verify method effectiveness. The surrogate was then analysed with the batch of samples and percentage recovery calculated.

7.2.4 Matrix spike

Matrix spikes consisted of samples spiked with a known concentration of the analyte being measured, in order to identify properties of the matrix that may hinder method effectiveness. Samples were spiked with concentrations equivalent to 5 to 10 times the LOR and percentage recovery calculated.

7.2.5 Method blanks

Method blanks (de-ionised water or clean sand) were carried through all stages of sample preparation and analysis at a rate of approximately 10%. Analyte concentrations in blanks should be less than the stated LOR. Reagent blanks were run if the method blank exceeded the LOR. The purpose of method blanks was to detect laboratory contamination.

7.3 Data acceptance criteria

The QA/QC was assessed against the Data Acceptance Criteria (DAC) provided in **Table 7-1**.

Table 7-1: QA/QC compliance assessment

QA/QC sample	DQI	Objectives	Acceptance criteria
Field QA/QC samples			
Blind replicate/triplicate samples	Precision Comparability	To ensure the primary data is reliable and fit for purpose. The assessment of blind duplicate and split replicate samples is undertaken by calculating the Relative Percent Difference (RPD) of the replicate or split concentration compared with the original sample concentration. The RPD is defined as: $RPD = 100 \times \frac{\lvert X1 - X2 \rvert}{Average}$	Analysed for the same chemicals as the primary sample. Typical RPDs are noted in AS 4482.1-2005 as between 30 – 50%. RPDs exceeding the acceptable range may be considered acceptable for heterogeneous material or where: ▪ No Limit (When the average concentration is < 10 times the LOR)

QA/QC sample	DQI	Objectives	Acceptance criteria
		Where: X1 and X2 are the concentration of the original and blind or split samples.	▪ 0 – 50% RPD (When the average concentration is 10 to 20 times the LOR)
Laboratory QA/QC			
Laboratory duplicates	Precision	To ensure precision of the analysis method and replicability of analysis due to potential sample heterogeneity. Assessment as per blind replicates and split samples	As per laboratory QC report
Matrix spike recoveries Laboratory Control Samples Surrogates	Accuracy	To assess the effect of the matrix, laboratory control samples and surrogates on the accuracy of the analytical method used. Assessment is undertaken by determining the percent recovery of the known spike or addition to the sample. $\% \text{ Recovery} = 100 \times \frac{C - A}{B}$ Where: A = Concentration of analyte determined in the original sample; B = Added Concentration; C = Calculated Concentration.	As per laboratory QC report
Method blanks	Accuracy	To assess potential bias introduced by the laboratory analytical method for a relevant analyte. A method blank assesses the component of the analytical result introduced from laboratory equipment. Each blank is analysed as per the original samples.	Analytical result < LOR

8 Quality assurance / quality control

For the purpose of assessing the quality of data presented in this report, Jacobs collected and analysed blind replicate samples, while the laboratory completed their own internal QC. The current section of this report is focused on the presentation of the results of these QC samples, adherence to Quality Assurance (QA) systems and discussion of deviations, if any from the DAC.

8.1 Field quality assurance

Field QA/QC for this project consisted of the collection of blind replicate samples.

8.2 Field quality control

The following QC samples were collected for laboratory analysis:

- Blind replicate: QAQC1 (duplicate of primary soil sample BH01_B)
- Blind triplicate: QAQC2 (triplicate of primary soil sample BH01_B).

One blind replicate sample was analysed to assess the quality control during the field sampling program. This equates to 10% blind replicate analysis. This blind replicate analysis exceeds and therefore conforms to AS 4482.1-2005.

The RPDs for all analytes for the soil blind replicate pair conformed to the DAC with the exception of the RPDs for selected PAH compounds. The sample collected for the blind replicate pair consisted of fill (silty clay). It is inherently difficult to obtain representative duplicate samples from fill materials which cannot be homogenised in order to retain the integrity of volatile compounds. None of the analytes detected in either sample exceeded the adopted investigation levels for commercial / industrial land use. The exceedances of selected PAH compounds between BH01_B and QAQC1 are unlikely to affect the usability of the data set.

One blind triplicate sample was analysed to assess the quality control during the field sampling program. This equates to 10% blind triplicate analysis. This blind triplicate analysis exceeds and therefore conforms to AS 4482.1-2005.

The RPDs for all analytes for the soil blind triplicate pairs conformed to the DAC with the exception of the RPDs for selected PAH compounds and heavy metals. The sample collected for the blind triplicate pair consisted of fill (silty clay). It is inherently difficult to obtain representative duplicate samples from fill materials which cannot be homogenised in order to retain the integrity of volatile compounds. None of the analytes detected in either sample exceeded the adopted investigation levels for commercial / industrial land sue. The exceedances of selected PAH compounds and heavy metals between BH01_B and QAQC2 are unlikely to affect the usability of the data set.

RPD results for soil blind replicate and triplicate pairs are detailed in **Table A** presented in **Appendix A**.

8.3 Laboratory quality assurance

All analysis was undertaken by NATA accredited laboratories using NATA accredited analytical methods.

8.4 Laboratory quality control

Where undertaken, laboratory QC data is presented in full in the laboratory certificates in **Appendix B**.

8.4.1 Laboratory duplicates

Where undertaken, the RPDs for the laboratory samples conformed to the DAC.

8.4.2 Laboratory control samples

Where undertaken, the recoveries for all laboratory control samples conformed to the DAC.

8.4.3 Surrogates

Where undertaken, the recoveries for all laboratory surrogate samples conformed to the DAC.

8.4.4 Matrix spikes

Recoveries for all matrix spike samples conformed to the DAC with the exception of the recoveries for 10:2 FTS, selected PAH compounds and chromium as detailed below:

- Matrix spike recovery for 10:2FTS (178%) was outside the global acceptance criteria (60-140%). However, an acceptable recovery has been obtained for the laboratory control sample
- Percent recovery for PAH from the matrix spike was not possible to report as the high concentration of analytes in sample 262787-5ms have caused interference
- Percent recovery for chromium was not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However, an acceptable recovery was obtained for the laboratory control sample.

These exceptions are not expected to compromise the integrity of the data.

8.4.5 Method blanks

Where undertaken, all method blanks reported analyte concentrations below the laboratory LOR and therefore conformed to the DAC.

8.4.6 Sample holding times

All soil samples were extracted and analysed within the specified holding times.

8.4.7 Sample condition

All samples were received by the analytical laboratory in correctly preserved and chilled containers with no reported breakages. The individual sample receipts are presented with the laboratory reports in Appendix B.

8.5 QA/QC assessment

It is concluded that the laboratory data are of acceptable quality and are considered useable in making conclusions and recommendations regarding the condition of soils at the site.

9 Site assessment criteria

9.1 Aesthetics

The National Environment Protection (Assessment of Site Contamination) Measure 1999, revised 2013 (NEPC, 2013) notes that there are no specific numeric aesthetic guidelines, however site assessments require a balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land use and its sensitivity. Consideration includes chemically discoloured soils, large quantities of various types of inert refuse and their depth etc.

9.2 Health investigation levels

To evaluate the significance of the reported soil concentrations with respect to the proposed use, Jacobs compared the analytical testing results against the soil quality guidelines published in the NEPC (2013) (i.e. health-based soil investigation (HIL) levels).

The HILs for a commercial/industrial land use (HIL-Setting D), NEPC (2013) were used to evaluate the significance of contamination.

The published guidelines adopted were based on a commercial/industrial land use as these were the most relevant exposure scenario for the proposed site use. However, we note that the published HIL guidelines are based on a much longer exposure period (i.e. 30 years). Therefore, direct application of the published HIL guidelines (for commercial/industrial) to the proposed site exposure (i.e. less than 5 years) was conservative.

As per the guidance provided in the NEPM (2013), average concentrations in soil were used to assess contaminant concentrations with respect to the guidelines rather than individual results. The NEPM also states that in order to use the average concentration of a contaminant, the data set must meet the following criteria:

- No single value should exceed 250% of the relevant investigation or screening level; and
- The standard deviation of the results should be less than 50% of the relevant investigation or screening level'.

Where the above criteria are not met, then the average concentration should not be used and the individual results must be directly compared to the guideline levels.

Published guidelines are also available for the evaluation of soil vapour exposure resulting from soil contaminated with petroleum hydrocarbons (Health Screening Levels (HSLs)). Jacobs have included HSLs for comparison to the soil assessment results. However, adoption of HSL guideline values is conservative given the proposed (temporary) use/occupation of the site (e.g. no permanent structures for occupation).

The HSLs depend on specific soil physio-chemical properties, land use scenarios, and the characteristics of building structures. They apply to different soil types, and depths below surface to >4 metres. Further details on their use are provided in Friebel and Nadebaum (2011a, 2011b & 2011c).

The HSLs defined within the NEPC (2013) relate only to the volatile fractions of the petroleum hydrocarbons range i.e. BTEX, naphthalene and TRH C6 – C10, TRH C10 – C16. Based on the presence of fill material across the site, HSLs for coarse grained sand to 0-1 m have been adopted.

The Jacobs assessment also considered the potential presence of asbestos. However, this was limited to:

- Field observations during the collection of soil samples (by Jacobs staff), and
- Testing of selected soil samples by the laboratory for the 'presence or absence' of asbestos.

We note that this was level of assessment does not constitute full characterisation of the site for the potential presence of asbestos nor is an 'asbestos clearance' provided by Jacobs. The potential for asbestos to be discovered during the occupation of the site should be considered within the management plan for any works on site (e.g. unexpected finds protocols). The adopted soil quality guidelines are detailed in **Table 9-1**.

Table 9-1: Adopted soil quality guidelines (mg/kg)

Compounds / Fraction	Soil Investigation Levels
	Commercial/Industrial
Heavy Metals	
Arsenic (total)	3,000 [1]
Cadmium	900 [1]
Chromium (VI)	3,600 [1]
Copper	240,000 [1]
Lead	1,500 [1]
Mercury (inorganic)	730[1]
Nickel	6,000 [1]
Zinc	400,000 [1]
Cyanide (free)	1,500 [1]
Polychlorinated Biphenyls (PCBs)	
PCBs	7 [1]
Polycyclic Aromatic Hydrocarbons (PAHs)	
Naphthalene	11,000 [3]
BaP TEQ	40 [1]
Total PAH	4,000 [1]
Total Recoverable Hydrocarbons (TRH) [4]	
C6-C10	26,000
>C10-C16	20,000
>C16-C34	27,000
>C34-C40	38,000
Organochlorine Pesticides (OCP)	
DDT+DDE+DDD	3,600 [1]
Aldrin and dieldrin	45 [1]
Chlordane	530 [1]
Endosulfan	2,000 [1]
Endrin	100 [1]

Compounds / Fraction	Soil Investigation Levels
	Commercial/Industrial
Heptachlor	50 [1]
HCB	80 [1]
Methoxychlor	2,500 [1]
Mirex	100 [1]
Toxaphene	160 [1]
F1, F2 and BTEX (based on SAND soil type) #	
Depth (m)	0 – <1
F1 (C6-C10 minus sum of BTEX concentrations)	260 [2]
F2 (>C10-C16 minus naphthalene)	NL [2]
Benzene	3 [2]
Toluene	99,000 [3]
Ethylbenzene	27,000 [3]
Xylenes	81,000 [3]
Naphthalene	11,000 [3]
Asbestos	
All forms of asbestos	No asbestos in any form present in soil samples analysed or observed on surface soils and in excavated materials

[1] NEPC (2013) Table 1 A(1) Health investigations levels for soil contaminants – Commercial / Industrial D.
[2] NEPC (2013) Table 1 A(3) Soil HSLs for vapour intrusion – Commercial / Industrial D, 0 to <1, SAND
[3] HSL-D Commercial / Industrial, Direct Contact detailed within Table A4, Friebel, E & Nadebaum, P 2011, Soil Health screening levels for direct contact, Technical Report 10.
NL – NL indicates the HSL is not limiting (see Footnote 5, Table 1A(3)).
TEQ – Toxic Equivalent.
Soil Vapour as the primary Exposure Pathway to impact potential receptors.

9.3 PFAS

The HEPA (2020) PFAS National Environmental Management Plan (NEMP, 2020) provides guideline values for the sum of PFOS and PFHxS and for PFOA in soil to be used for the assessment of potential human exposure through direct soil contact. The PFAS NEMP (2020) further notes that the guideline values should be used in conjunction with other lines of investigations to account for potential leaching, off-site transport, bioaccumulation and secondary exposure.

The soil guideline values are based on the NEPC (2013) Health Investigation Level (HIL) assumptions for specific land uses. All of the guideline values assume that 20% of the Food Standards Australia and New Zealand Tolerable Daily Intake (FSANZ TDI) is from the exposure scenario (i.e. up to 80% of exposure is assumed to come from other pathways). The guideline values applicable for this investigation and additional assumptions are as follows:

- Industrial/ commercial: These values were derived based on standard NEPC (2013) assumptions for HIL—D. The values assume 8 hours spent indoors and 1 hour spent outdoors at a site such as a shop, office, factory or industrial site.

In terms of the investigation criteria for soil on the site, industrial/commercial HIL have been applied. The adopted soil screening criteria for human health are provided in **Table 9-2.**

Table 9-2: Investigation criteria for PFAS in soils for the protection of human health (mg/kg)

Exposure scenario	PFOS+ PFHxS	PFOA	Comment
On-site	20	50	Based on PFAS NEMP (2020) guideline values for commercial / industrial land use.

10 Results

10.1 Site stratigraphy

A summary of the sub-surface material excavated from the investigation locations is provided in **Table 10-1**.

Table 10-1: Summary of sub-surface materials

BH01	
Co-ordinates: Lat: 33º49.9905'S; Long: 151º12.6694'E	
Depth range (mbgl)	**Material description**
0.0	Grass
0.0 - 0.5	Topsoil/fill: silty clay, dark brown, rootlets, fine grained, moist
0.2	Colour change to light brown/yellow and glass fragments present
0.25	Colour change back to dark brown
0.3	Coarse gravel inclusions, sub-rounded
0.5 – 1.0	FILL: sandy clay with gravel, red mottled white, fine to coarse grained, coarse gravel, sandstone and concrete boulders, dry
0.6	Asphalt inclusions and slight hydrocarbon odour
1.0	Sandy clay: brown mottled red, fine to coarse grained, sandstone gravel, moist. Excavation terminated at 1.0 mbgl (limit of investigation).
BH02	
Co-ordinates: Lat: 33º49.9658'S; Long: 151º12.6591'E	
Depth range (mbgl)	**Material description**
0.0	Grass
0.0-0.1	Topsoil/fill: silty sand, dark brown, rootlets, fine to coarse grained, moist
0.1 - 0.35	Fill: silty sandy clay with sandstone gravel, dark brown/brown/red mottled, fine to coarse grained, coarse gravel, dry
0.35 – 0.45	FILL: clay with sand, brown/red, stiff, dry
0.45 – 0.85	FILL: sandy clay with gravel, dark brown, building materials present (iron nail, clay tile fragments, asphalt), dry
0.85 – 0.9	FILL: clayey sand with sandstone gravel, white, fine to coarse grained, coarse gravel, dry
0.9 – 1.0	FILL: sandy clay, dark brown with gravel, moist. Excavation terminated at 1.0 mbgl (limit of investigation).
BH03	
Co-ordinates: Lat: 33º49.9661'S; Long: 151º12.6593'E	
Depth range (mbgl)	**Material description**
0.0	Grass
0.0 - 0.3	Topsoil/fill: silty clay with sandstone gravel, dark brown, fine to coarse grained, moist
0.3 – 1.0	FILL: sandy clay with gravel, white mottled red, dry
0.75	Asphalt present
0.8	Ironstone present
1.0	Excavation terminated at 1.0 mbgl (limit of investigation).
BH04	
Co-ordinates: Lat: 33º49.9401'S; Long: 151º12.6857'E	
Depth range (m)	**Material description**

0.0	Grass
0.0 – 1.0	FILL: clay with sand, brown/red, ironstone inclusions (between 0.0 and 0.4 mbgl), moist
0.6	Colour change to dark brown, dry
0.8	Charcoal fragment present
1.0	Excavation terminated at 1.0 mbgl (limit of investigation).
BH05	
Co-ordinates: Lat: 33º49.9077'S; Long: 151º12.7002'E	
Depth range (m)	**Material description**
0.0	Grass
0.0 – 1.0	FILL: sandy clay with some sandstone gravel, brown/red, fine to coarse grained, medium to coarse gravel, subangular, moist
0.6	Colour change to dark brown
0.7	Colour change to red/brown
0.9	Ironstone gravel inclusions, angular
1.0	Excavation terminated at 1.0 mbgl (limit of investigation).

10.2 Aesthetics

Fill was identified at all locations to the limit of the investigation (1.0 mbgl) with the exception of BH01. (natural material was encountered at 1.0 mbgl at location BH001). The fill material comprised topsoil/fill overlying sandstone gravels, concrete gravels and construction waste (asphalt, iron nail, clay tile). No potential asbestos containing materials, odorous or discoloured materials were identified in the material recovered from the investigation locations. No potential asbestos containing materials were observed on the surface in the near vicinity of the investigation locations.

Given the presence of other building waste/debris, there is a potential for asbestos containing materials to also be present. Jacobs do not recommend further assessment of the site for asbestos, however, the potential for asbestos containing materials to be present within the subsurface should be noted within the Construction and Environmental Management Plan (including an unexpected finds procedure).

10.3 Soil analytical results

Soil analytical results from samples collected from the SMEC and Jacobs investigations in comparison to the adopted HIL/HSL are discussed below.

Analytical results (SMEC and Jacobs combined) are provided in **Table B** presented **in Appendix A**. Laboratory certificates of analysis from the Jacobs investigation are presented in **Appendix B**.

All individual samples reported concentrations below the adopted soil quality guidelines.

Asbestos was not identified by the laboratory in any of the samples submitted for asbestos identification.

With respect to the PFAS concentrations reported:

- No known point source of PFAS were identified on site, suggesting PFAS concentrations reported are likely to be indicative of widespread contamination that are likely to be related to widespread diffuse contamination extending beyond the boundary of the investigation area.
- PFAS concentrations were several orders of magnitude below the adopted guideline levels for commercial/industrial land use.

The presence of PFAS in soil is expected to have a negligible impact to the proposed use of the site. However, the site management plan should give consideration to the management of on-site soils (to limit

unnecessary exposure and/or disturbance). Where soils are excavated for off-site disposal appropriate classification and management will be required.

10.4 Statistical analysis and discussion

The following information provides a summary of the data obtained from the SMEC (2020) and the Jacobs investigations.

The data summary has only been undertaken on the potential contaminants (heavy metals, TRH, BTEX, PAH, OCP, PCB, VOC, PFAS and cyanide) as detailed in Appendix M of the EIS (2020) prepared for the Western Harbour Tunnel and Warringah Freeway Upgrade project which have a respective adopted HIL/HSL. There is insufficient data for other contaminant compounds analysed as part of the SMEC (2020) investigation to enable reliable statistical analysis to be undertaken.

The data summary has only been undertaken on the potential contaminants (heavy metals, TRH, BTEX, PAH, pesticides, PCB, VOC, PFAS and cyanide) as detailed in Appendix M of the EIS (2020) prepared for the Western Harbour Tunnel and Warringah Freeway Upgrade project which have a respective adopted HIL/HSL.

The data summary assumes the following:

- The data summary does not include the asbestos identification undertaken at the site as the HIL/HSL is based on presence/absence and not on a numerical concentration.
- Only those contaminant compounds which have HIL/HSL have been subject to statistical analysis.
- Where concentrations of contaminant compounds have been reported at less than the laboratory levels or reporting (LOR), these results have been reported as half the LOR to enable statistical analysis.
- The data summary has been prepared for fill materials only.

The data summary is detailed in **Table 10-2**.

Table 10-2: Data summary

Contaminant	No. samples analysed	Maximum concentration (mg/kg)	95% UCL concentration (mg/kg)	Arithmetic mean concentration (mg/kg)	Standard deviation (mg/kg)	Adopted HIL/HSL	Number of individual samples above HIL/HSL	95%UCL above HIL/HSL	Arithmetic mean above HIL/HSL	Maximum concentration >250% of HIL/HSL	Standard deviation >50% of HIL/HSL
Naphthalene	47	3.1	0.377	0.272	0.423	11,000	0	0	No	✓	✓
Total PAH's	47	222	26.51	17.155	37.802	4,000	0	0	No	✓	✓
B(a)P TEQ	47	28	4.209	3.022	4.792	40	0	0	No	✓	✓
Arsenic	47	24	5.733	4.787	3.82	3,000	0	0	No	✓	✓
Cadmium	47	0.5	0.461	0.429	0.127	900	0	0	No	✓	✓
Chromium	47	73	23.33	19.851	14.044	3,600	0	0	No	✓	✓
Copper	47	299	32.21	21.574	42.970	240,000	0	0	No	✓	✓
Lead	47	144	59.87	50.393	38.299	1,500	0	0	No	✓	✓
Mercury	47	1.1	0.132	0.092	0.160	730	0	0	No	✓	✓
Nickel	47	60	9.004	6.351	10.719	6,000	0	0	No	✓	✓
Zinc	47	228	46.02	36.244	39.492	400,000	0	0	No	✓	✓
Cyanide	11	0.6	0.339	0.281	0.101	1,500	0	0	No	✓	✓
Toluene	11	0.25	NV	0.250	0.00	99,000	0	0	No	✓	✓

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Contaminant	No. samples analysed	Maximum concentration (mg/kg)	95% UCL concentration (mg/kg)	Arithmetic mean concentration (mg/kg)	Standard deviation (mg/kg)	Adopted HIL/HSL	Number of individual samples above HIL/HSL	95%UCL above HIL/HSL	Arithmetic mean above HIL/HSL	Maximum concentration >250% of HIL/HSL	Standard deviation >50% of HIL/HSL
TRH C6 - C10	47	12.5	7.541	6.755	3.175	26,000	0	0	No	✓	✓
TPH C6 - C10 less BTEX (F1)	47	12.5	7.541	6.755	3.175	260	0	0	No	✓	✓
Benzene	47	0.1	NV	0.100	0.000	3	0	0	No	✓	✓
Ethylbenzene	47	0.5	0.335	0.308	0.106	27,000	0	0	No	✓	✓
Total Xylenes	47	1.5	0.674	0.542	0.529	81,000	0	0	No	✓	✓
TRH >C10-C16	47	25	NV	25.000	0.000	20,000	0	0	No	✓	✓
TRH >C10 - C16 less Naphthalene (F2)	47	25	NV	25.000	0.000	20,000	0	0	No	✓	✓
TRH >C16-C34	47	1420	215.9	157.234	237.125	27,000	0	0	No	✓	✓
TRH >C34-C40	47	470	127.9	100.213	111.746	38,000	0	0	No	✓	✓
HCB	11	0.05	NV	0.050	0.000	80	0	0	No	✓	✓
Heptachlor	48	0.05	0.0333	0.031	0.010	50	0	0	No	✓	✓
Aldrin	48	0.05	0.0333	0.031	0.010	45	0	0	No	✓	✓
gamma-Chlordane	48	0.05	0.0333	0.031	0.010	530	0	0	No	✓	✓
alpha-chlordane	48	0.05	0.0333	0.031	0.010	530	0	0	No	✓	✓

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Detailed Site Investigation Report – Ridge Street (WP12)

Contaminant	No. samples analysed	Maximum concentration (mg/kg)	95% UCL concentration (mg/kg)	Arithmetic mean concentration (mg/kg)	Standard deviation (mg/kg)	Adopted HIL/HSL	Number of individual samples above HIL/HSL	95%UCL above HIL/HSL	Arithmetic mean above HIL/HSL	Maximum concentration >250% of HIL/HSL	Standard deviation >50% of HIL/HSL
Dieldrin	48	0.05	0.0333	0.030	0.010	45	0	0	No	✓	✓
Endrin	48	0.05	0.0333	0.030	0.010	100	0	0	No	✓	✓
Endosulfan II	48	0.05	0.0333	0.030	0.010	2,000	0	0	No	✓	✓
Methoxychlor	48	0.1	0.0937	0.088	0.021	2,500	0	0	No	✓	✓
Total DDT+DDD+DDE	48	0.05	0.0333	0.030	0.010	3,600	0	0	No	✓	✓
Total PCBs	11	0.05	NV	0.050	0.000	7	0	0	No	✓	✓
PFOA	10	0.0004	0.0005	0.000	0.000	50	0	0	No	✓	✓
PFHxS & PFOS	10	0.0012	0.00223	0.000	0.000	20	0	0	No	✓	✓

✓ Arithmetic mean/individual concentration/maximum concentration/standard deviation soil concentration below soil quality guideline and/or acceptable statistical evaluation criteria.

x Arithmetic mean/individual concentration/maximum concentration/standard deviation soil concentration above soil quality guideline and/or unacceptable statistical evaluation criteria.

NV – No variance

11 Conclusions and recommendations

The following conclusions and recommendations were made based on the scope/limitations of the combined SMEC/Jacobs assessment:

Conclusions

- Reported contaminant concentrations in soil were below the adopted guideline values (for all individual sample results).
- Inert building waste and debris was noted at several locations within fill material across the site.
- Asbestos was not identified by the laboratory in any of the samples submitted for asbestos identification. Asbestos containing materials were not observed by Jacobs while collecting the soil samples.

Recommendations

- Given the presence of other building waste/debris (and the heterogeneous nature of such waste), there is a potential for undiscovered soil contamination and/or asbestos containing materials to also be present. Jacobs do not recommend further assessment of the site, however, the potential for undiscovered soil contamination and/or asbestos containing materials to be present within the subsurface should be noted within the Construction and Environmental Management Plan (including an unexpected finds procedure).
- The site management plan should also ensure that any disturbance of the site surface is managed appropriately (including off-site disposal). For example, minimise dust generation, surface water/sediment runoff from the site, etc.).

12 Approval response

The results of the SMEC (2020) and Jacobs investigations in context of the risk management strategy as detailed in the EIS Appendix M (2020) and the draft conditions of approval are presented in **Table 12-1** and **Table 12-2**.

Table 12-1: Responses to risk management strategy

Risk management strategy (EIS Appendix M, 2020)	Response
Based on the information reviewed, a number of moderate to high risk potential AEIs have been identified. Where extensive investigations have not been carried out (all high to moderate risk sites with the exception of the Rozelle Rail Yards site), potentially contaminated areas directly affected by the project will be investigated and managed in accordance with the requirements of guidance endorsed under section 105 of the Contaminated Land Management Act 1997.	The EIS Appendix M (2020) identified the site as a moderate contamination risk site. The investigations (SMEC and Jacobs) undertaken at the site have been undertaken in general accordance with guidance endorsed under Section 105 of the Contaminated Land management Act 1997. Contamination was not identified at concentrations above the adopted HIL/HSL for a commercial / industrial use of the site. Asbestos was not identified in any sample submitted for laboratory identification. Jacobs did not observe potential asbestos containing materials in the vicinity of the investigation locations or within materials excavated as part of the investigation. Therefore, specific management (i.e. remediation as defined by the Contaminated Land Management Act 1997) of contamination is not required at the site under a commercial/industrial land use setting.

Table 12-2: Responses to condition of approvals

Number	Condition of approval	Response
E115	Prior to the commencement of any work that would result in the disturbance of moderate to high risk contaminated sites as identified in the documented listed in Condition A1, a Detailed Site Investigations must be undertaken by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand's "Certified Environmental Practitioner" (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia "Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme	The SMEC and Jacobs field works were completed prior to occupation/use of the site for the purpose of the construction project. DSI report was reviewed/completed by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand's "Certified Environmental Practitioner" (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia "Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.
E116	A Detailed Site Investigation Report must be prepared and submitted to the Planning Secretary for information following the completion of Detailed Site Investigations required by Condition E115. The report must be prepared in accordance with relevant guidelines made or approved by	The investigations (by SMEC and Jacobs) undertaken at the site have been undertaken in general accordance with guidance endorsed under Section 105 of the Contaminated Land management Act 1997 and other relevant guidelines. The DSI report was reviewed/completed by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand's "Certified Environmental Practitioner"

Number	Condition of approval	Response
	the EPA under section 105 of the *Contaminated Land Management Act 1997* (NSW) and prepared by a Contaminated Land Consultant certified under either the Environment Institute of Australia or New Zealand's "Certified Environmental Practitioner" (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia "Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. Nothing in this condition prevents the Proponent from preparing individual Site Contamination Reports for separate sites	(Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia "Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme.
E117	The Detailed Site Investigation Report must provide details on:	
	(a) primary sources of contamination, for example potentially contaminating activities, infrastructure (such as underground storage tanks, fuel line, sumps or sewer lines) or site practices;	The EIS Appendix M (2020) did not identify point sources of contamination within the investigation area. The EIS identified particulate deposition and historic fill as the most likely source of contamination. The Jacobs investigation was designed to evaluate contamination associated with particulate deposition and filling across the site. The SMEC (2020) investigation inadvertently assessed potential impacts associated with particulate deposition and filling at the site. Jacobs did not observe any primary sources of contamination during the assessment.
	(b) contaminant dispersal in air, hazardous ground gases, surface water, groundwater, soil vapour, separate phase contaminants, sediments, infrastructure (e.g. concrete), biota, soil and dust;	Contamination was not identified at concentrations above the adopted HIL/HSL for a commercial / industrial use of the site. Asbestos was not identified in any sample submitted for laboratory identification. Jacobs did not observe potential asbestos containing materials in the vicinity of the investigation locations or within materials excavated as part of the investigation. In the event that fill is disturbed and relocated onsite, soil management practices during movement and following relocation should be implemented to minimise exposure, dust and runoff.
	(c) contaminant characterisation and behaviour (volatility, leachability, speciation, degradation products and physical and chemical conditions on-site which may affect how contaminants behave);	As noted above for (b).
	(d) potential effects of contaminants on human health, including the health of occupants of built structures (for example arising from risks to service lines from hydrocarbons in groundwater, or risks to	Contamination was not identified at concentrations above the adopted HIL/HSL for a commercial / industrial use of the site. Asbestos was not identified in any sample submitted for laboratory identification. Jacobs did not observe potential asbestos containing materials in the vicinity of the investigation locations or within materials excavated as part of the investigation.

Number	Condition of approval	Response
	concrete from acid sulphate soils) and the environment;	However, as a conservative measure, soil management practices should be implemented to minimise exposure, dust, runoff etc.
	(e) potential and actual contaminant migration routes including potential preferential pathways;	Refer to (d).
	(f) the adequacy and completeness of all information available for use in the assessment of risk and for making decisions on management requirements, including an assessment of uncertainty;	Refer to Section 3 of this report for the assumptions and limitations related to this report. The assessment undertaken was considered to be adequate to meet these objectives with the resultant recommendation for application of conservative preventative exposure measures during the occupation of the site for construction activities.
	(g) the review and update of the conceptual site model from the preliminary and detailed site investigations;	The EIS CSM assumed surface deposition was the primary source of contamination. Given the results of the assessment, revision of the CSM was not required.
	(h) nature and extent of any existing remediation (such as impervious surface cappings);	No existing remediation infrastructure was observed or documented at the site.
	(i) whether the land is suitable (for the intended final land use) or can be made suitable through remediation.	Refer to Section 3 of this report for the assumptions and limitations related to this report. Contamination was not reported above the adopted guideline values for the proposed construction use of the site. However, conservative preventative exposure measures have been recommended (refer to (d) above).
E118	Should remediation be required to make land suitable for the final intended land use, a Remediation Action Plan must be prepared or reviewed and approved, by consultants certified under either the Environment Institute of Australia and New Zealand's Certified Environmental Practitioner (Site Contamination) scheme (CEnvP(SC)) or the Soil Science Australia Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) scheme. The Remedial Action Plan must be prepared in accordance with relevant guidelines made or approved by the EPA under section 105 of the Contaminated Land Management Act 1997 and must include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use when the	Remediation is not required.

Number	Condition of approval	Response
	Remedial Action Plan is implemented. The Remedial Action Plan must be submitted to the Planning Secretary for information prior to undertaking remediation.	
E119	The Remediation Action Plan must include measures to remediate the contamination at the site to ensure the site will be suitable for the proposed use and detail how the environmental and human health risks will be managed during the disturbance, remediation and/or removal of contaminated soil/sediment or groundwater. Nothing in this condition prevents the preparation of individual Remediation Action Plans for separate sites.	Not applicable
E120	Prior to commencing remediation, a Section B Site Audit Statement(s) must be prepared by a NSW EPA-accredited Site Auditor that certifies that the Remediation Action Plan is appropriate and that the site can be made suitable for the proposed use. The Remedial Action Plan must be implemented and any changes to the Remedial Action Plan must be approved in writing by the NSW EPA accredited Site Auditor. Nothing in this condition prevents the Proponent from engaging the Site Auditor to prepare Site Audit Statements for separate sites.	Not applicable.
E121	A Section A1 or A2 Site Audit Statement (accompanied by an Environmental Management Plan) and its accompanying Site Audit Report, which state that the contaminated land disturbed by the work has been made suitable for the intended land use, must be submitted to the Planning Secretary and Council after remediation and no later than prior to the commencement of operation of the CSSI. Nothing in this condition prevents the Proponent from obtaining Section A Site Audit Statements for individual parcels of remediated land.	Not applicable.
E122	Contaminated land must not be used for the purpose approved under the terms of this approval until a Section A1 or A2 Site Audit Statement is obtained which states that the land is suitable for that purpose and any	Not applicable.

Number	Condition of approval	Response
	conditions on the Section A Site Audit Statement have been complied with.	
E123	An Unexpected Finds Procedure for Contamination must be prepared before the commencement of work and must be followed should unexpected contamination or asbestos (or suspected contamination) be excavated or otherwise discovered. The procedure must include details of who will be responsible for implementing the unexpected finds procedure and the roles and responsibilities of all parties involved. The procedure must be submitted to the Planning Secretary for information.	An Unexpected Finds Procedure for contamination will be prepared before the commencement of work.
E124	The Unexpected Finds Procedure for Contamination must be implemented throughout construction.	An Unexpected Finds Procedure for contamination will be implemented throughout construction

Appendix A – Tables

Table A: RPD Results

		Sample ID	BH01-B	QAQC1	RPD (%)	BH01-B	QAQC2	RPD (%)
		Depth (m)	0.25	-		0.25	-	
		Date	24/02/2021	24/02/2021		24/02/2021	24/02/2021	
Compounds	Units	LOR						
Dichlorodifluoromethane	mg/kg	1	<1	<1	-	<1	<0.5	-
Chloromethane	mg/kg	1	<1	<1	-	<1	<0.5	-
Vinyl Chloride	mg/kg	1	<1	<1	-	<1	<0.5	-
Bromomethane	mg/kg	1	<1	<1	-	<1	<0.5	-
Chloroethane	mg/kg	1	<1	<1	-	<1	<0.5	-
Trichlorofluoromethane	mg/kg	1	<1	<1	-	<1	<0.5	-
1,1-Dichloroethene	mg/kg	1	<1	<1	-	<1	<0.5	-
trans-1,2-dichloroethene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,1-dichloroethane	mg/kg	1	<1	<1	-	<1	<0.5	-
cis-1,2-dichloroethene	mg/kg	1	<1	<1	-	<1	<0.5	-
bromochloromethane	mg/kg	1	<1	<1	-	<1	<0.5	-
chloroform	mg/kg	1	<1	<1	-	<1	<0.5	-
2,2-dichloropropane	mg/kg	1	<1	<1	-	<1	<0.5	-
1,2-dichloroethane	mg/kg	1	<1	<1	-	<1	<0.5	-
1,1,1-trichloroethane	mg/kg	1	<1	<1	-	<1	<0.5	-
1,1-dichloropropene	mg/kg	1	<1	<1	-	<1	<0.5	-
Cyclohexane	mg/kg	1	<1	<1	-	<1	<0.5	-
carbon tetrachloride	mg/kg	1	<1	<1	-	<1	<0.5	-
Benzene	mg/kg	0.2	<0.2	<0.2	-	<0.2	<0.1	-
dibromomethane	mg/kg	1	<1	<1	-	<1	<0.5	-
1,2-dichloropropane	mg/kg	1	<1	<1	-	<1	<0.5	-
trichloroethene	mg/kg	1	<1	<1	-	<1	<0.5	-
bromodichloromethane	mg/kg	1	<1	<1	-	<1	<0.5	-
trans-1,3-dichloropropene	mg/kg	1	<1	<1	-	<1	<0.5	-
cis-1,3-dichloropropene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,1,2-trichloroethane	mg/kg	1	<1	<1	-	<1	<0.5	-
Toluene	mg/kg	0.5	<0.5	<0.5	-	<0.5	<0.1	-
1,3-dichloropropane	mg/kg	1	<1	<1	-	<1	<0.5	-
dibromochloromethane	mg/kg	1	<1	<1	-	<1	<0.5	-
1,2-dibromoethane	mg/kg	1	<1	<1	-	<1	<0.5	-
tetrachloroethene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,1,1,2-tetrachloroethane	mg/kg	1	<1	<1	-	<1	<0.5	-
chlorobenzene	mg/kg	1	<1	<1	-	<1	<0.5	-
Ethylbenzene	mg/kg	1	<1	<1	-	<1	<0.1	-
bromoform	mg/kg	1	<1	<1	-	<1	<0.5	-
m+p-xylene	mg/kg	2	<2	<2	-	<2	<0.2	-
styrene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,1,2,2-tetrachloroethane	mg/kg	1	<1	<1	-	<1	<0.5	-
o-Xylene	mg/kg	1	<1	<1	-	<1	<0.1	-
1,2,3-trichloropropane	mg/kg	1	<1	<1	-	<1	<0.5	-
isopropylbenzene	mg/kg	1	<1	<1	-	<1	<0.5	-
bromobenzene	mg/kg	1	<1	<1	-	<1	<0.5	-
n-propyl benzene	mg/kg	1	<1	<1	-	<1	<0.5	-
2-chlorotoluene	mg/kg	1	<1	<1	-	<1	<0.5	-
4-chlorotoluene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,3,5-trimethyl benzene	mg/kg	1	<1	<1	-	<1	<0.5	-
tert-butyl benzene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,2,4-trimethyl benzene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,3-dichlorobenzene	mg/kg	1	<1	<1	-	<1	<0.5	-
sec-butyl benzene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,4-dichlorobenzene	mg/kg	1	<1	<1	-	<1	<0.5	-
4-isopropyl toluene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,2-dichlorobenzene	mg/kg	1	<1	<1	-	<1	<0.5	-
n-butyl benzene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,2-dibromo-3-chloropropane	mg/kg	1	<1	<1	-	<1	<0.5	-
1,2,4-trichlorobenzene	mg/kg	1	<1	<1	-	<1	<0.5	-
hexachlorobutadiene	mg/kg	1	<1	<1	-	<1	<0.5	-
1,2,3-trichlorobenzene	mg/kg	1	<1	<1	-	<1	<0.5	-
TRH C6 - C9	mg/kg	25	<25	<25	-	<25	<20	-
TRH C6 - C10	mg/kg	25	<25	<25	-	<25	<20	-
vTPH C6 - C10 lessBTEX (F1)	mg/kg	25	<25	<25	-	<25	<20	-
Benzene	mg/kg	0.2	<0.2	<0.2	-	<0.2	<0.1	-
Toluene	mg/kg	0.5	<0.5	<0.5	-	<0.5	<0.1	-
Ethylbenzene	mg/kg	1	<1	<1	-	<1	<0.1	-
m+p-xylene	mg/kg	2	<2	<2	-	<2	<0.2	-
o-Xylene	mg/kg	1	<1	<1	-	<1	<0.1	-
naphthalene	mg/kg	1	<1	<1	-	<1	<0.5	-
Total +ve Xylenes	mg/kg	3	<3	<3	-	<3	<0.3	-
TRH C10 - C14	mg/kg	50	<50	<50	-	<50	<20	-
TRH C15 - C28	mg/kg	100	<100	190	-	<100	<50	-
TRH C29 - C36	mg/kg	100	<100	<100	-	<100	<50	-
TRH >C10-C16	mg/kg	50	<50	<50	-	<50	<50	-
TRH >C10 - C16less Naphthalene (F2)	mg/kg	50	<50	<50	-	<50	<50	-
TRH >C16-C34	mg/kg	100	<100	260	-	<100	<100	-
TRH >C34-C40	mg/kg	100	<100	120	-	<100	<100	-
Total +ve TRH (>C10-C40)	mg/kg	50	<50	380	-	<50	<50	-
Naphthalene	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Acenaphthene	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Fluorene	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Phenanthrene	mg/kg	0.1	0.3	<0.1	-	0.3	<0.5	-
Anthracene	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Fluoranthene	mg/kg	0.1	0.6	0.2	100	0.6	0.6	0
Pyrene	mg/kg	0.1	0.9	0.2	127	0.9	0.6	40
Benzo(a)anthracene	mg/kg	0.1	0.5	0.1	133	0.5	<0.5	-
Chrysene	mg/kg	0.1	0.4	0.1	120	0.4	<0.5	-
Benzo(b,j+k)fluoranthene	mg/kg	0.2	0.8	0.2	120	0.8	0.5	46
Benzo(a)pyrene	mg/kg	0.05	0.52	0.1	135	0.52	0.6	14
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	0.1	<0.1	-	0.1	<0.5	-
Dibenzo(a,h)anthracene	mg/kg	0.1	0.1	<0.1	-	0.1	<0.5	-
Benzo(g,h,i)perylene	mg/kg	0.1	0.4	<0.1	-	0.4	<0.5	-
Total +vePAH's	mg/kg	0.05	4.6	0.92	133	4.6	2.3	67
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.5	0.8	<0.5	-	0.8	0.7	13
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.5	0.8	<0.5	-	0.8	1	22
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	0.8	<0.5	-	0.8	1.3	48
alpha-BHC	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
HCB	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
beta-BHC	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
gamma-BHC	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Heptachlor	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
delta-BHC	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Aldrin	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Heptachlor Epoxide	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
gamma-Chlordane	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
alpha-chlordane	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Endosulfan I	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
pp-DDE	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Dieldrin	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Endrin	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Endosulfan II	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
pp-DDD	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
pp-DDT	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Endosulfan Sulphate	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Methoxychlor	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.2	-
Total +ve DDT+DDD+DDE	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.05	-
Aroclor 1016	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Aroclor 1221	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.1	-
Aroclor 1232	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Aroclor 1242	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Aroclor 1248	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Aroclor 1254	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Aroclor 1260	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Total +ve PCBs (1016-1260)	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.5	-
Arsenic	mg/kg	4	<4	<4	-	<4	4.4	-
Cadmium	mg/kg	0.4	<0.4	<0.4	-	<0.4	<0.4	-
Chromium	mg/kg	1	8	7	13	8	24	100
Copper	mg/kg	1	11	9	20	11	13	17
Lead	mg/kg	1	25	39	44	25	50	67
Mercury	mg/kg	0.1	<0.1	<0.1	-	<0.1	<0.1	-
Nickel	mg/kg	1	8	6	29	8	14	55
Zinc	mg/kg	1	27	20	30	27	45	50
Cyanide	mg/kg	0.5	0.6	<0.5	-	0.6	<1	-

Table B: Analytical Results

Compounds	Commercial/Industrial	Units	LOR	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A	BH04_C
				SPA 2021										
Depth (m)				-	0.25	1.00	0.00	0.50	0.00	1.00	0.25	1.00	0.00	0.50
Date				24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Dichlorodifluoromethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vinyl Chloride		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trichlorofluoromethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-Dichloroethene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-dichloroethene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-dichloroethene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
bromochloromethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroform		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2,2-dichloropropane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloropropene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cyclohexane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
carbon tetrachloride		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Benzene	3	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
dibromomethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
bromodichloromethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,3-dichloropropene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,3-dichloropropene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Toluene	99,000	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
dibromochloromethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromoethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
chlorobenzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	27,000	mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
bromoform		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
m+p-xylene		mg/kg	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
styrene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-Xylene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
isopropylbenzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
bromobenzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-propyl benzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
2-chlorotoluene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-chlorotoluene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tert-butyl benzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,3-dichlorobenzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
sec-butyl benzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
4-isopropyl toluene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
n-butyl benzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
hexachlorobutadiene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
TRH C6 - C9		mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
TRH C6 - C10	26,000	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
vTPH C6 - C10 lessBTEX (F1)	260	mg/kg	25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25	<25
Benzene	3	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	99,000	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	27,000	mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
m+p-xylene		mg/kg	2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
o-Xylene		mg/kg	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
naphthalene	11,000	mg/kg	1	<1	<1	1	<1	<1	<1	<1	<1	<1	<1	<1
Total +ve Xylenes	81,000	mg/kg	3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3
TRH C10 - C14		mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH C15 - C28		mg/kg	100	190	<100	390	<100	320	170	<100	<100	<100	<100	<100
TRH C29 - C36		mg/kg	100	<100	<100	410	<100	480	150	<100	<100	<100	<100	<100
TRH >C10-C16	20,000	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH >C10 - C16less Naphthalene (F2)	20,000	mg/kg	50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH >C16-C34	27,000	mg/kg	100	260	<100	310	<100	650	280	<100	<100	<100	<100	<100
TRH >C34-C40	38,000	mg/kg	100	120	<100	410	<100	470	140	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)		mg/kg	50	380	<50	720	<50	1100	420	<50	<50	<50	<50	<50
Naphthalene	11,000	mg/kg	0.1	<0.1	<0.1	3.1	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene		mg/kg	0.1	<0.1	<0.1	1.2	<0.1	0.5	0.5	<0.1	<0.1	0.1	0.1	<0.1
Acenaphthene		mg/kg	0.1	<0.1	<0.1	1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene		mg/kg	0.1	<0.1	<0.1	1.5	<0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene		mg/kg	0.1	<0.1	0.3	15	<0.1	3.5	1.8	<0.1	<0.1	0.3	0.2	0.1
Anthracene		mg/kg	0.1	<0.1	<0.1	4.1	<0.1	0.8	0.6	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene		mg/kg	0.1	0.2	0.6	15	<0.1	8.6	7.9	0.3	<0.1	0.9	0.6	0.5
Pyrene		mg/kg	0.1	0.2	0.9	15	<0.1	8.6	9.3	0.4	<0.1	0.9	0.8	0.6
Benzo(a)anthracene		mg/kg	0.1	0.1	0.5	9.6	<0.1	5.5	7.9	0.4	<0.1	0.7	0.7	0.5
Chrysene		mg/kg	0.1	0.1	0.4	6.9	<0.1	4.4	6.4	0.2	<0.1	0.5	0.5	0.4
Benzo(b+j)fluoranthene		mg/kg	0.5	-	-	-	-	-	-	-	-	-	-	-
Benzo(k)fluoranthene		mg/kg	0.5	-	-	-	-	-	-	-	-	-	-	-
Benzo(b,j+k)fluoranthene		mg/kg	0.2	0.2	0.8	11	<0.2	8.4	12	0.6	<0.2	0.9	1	0.8
Benzo(a)pyrene		mg/kg	0.05	0.1	0.52	7.9	<0.05	5	7.9	0.4	0.05	0.55	0.75	0.5
Indeno(1,2,3-c,d)pyrene		mg/kg	0.1	<0.1	0.1	3.7	<0.1	2.4	2.6	0.2	<0.1	0.3	0.4	0.3
Dibenzo(a,h)anthracene		mg/kg	0.1	<0.1	0.1	1.2	<0.1	0.8	1	<0.1	<0.1	0.1	0.2	0.1
Benzo(g,h,i)perylene		mg/kg	0.1	<0.1	0.4	4.3	<0.1	2.7	3	<0.1	<0.1	0.3	0.5	0.3
Total +vePAH's	4,000	mg/kg	0.05	0.92	4.6	100	<0.05	52	61	2.4	0.05	5.5	6	4
Benzo(a)pyrene TEQ calc (zero)	40	mg/kg	0.5	<0.5	0.8	12	<0.5	7.5	11	<0.5	<0.5	0.9	1.1	0.8
Benzo(a)pyrene TEQ calc(half)	40	mg/kg	0.5	<0.5	0.8	12	<0.5	7.5	11	0.5	<0.5	0.9	1.1	0.8
Benzo(a)pyrene TEQ calc(PQL)	40	mg/kg	0.5	<0.5	0.8	12	<0.5	7.5	11	0.6	<0.5	0.9	1.1	0.8
alpha-BHC		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	80	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	50	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	45	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	530	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	530	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	2,000	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	45	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	100	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	2,000	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	2,500	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	3,600	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1016		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260		mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	7	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Arsenic	3,000	mg/kg	4	<4	<4	<4	<4	<4	5	<4	7	6	5	<4
Cadmium	900	mg/kg	0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	3,600	mg/kg	1	7	8	73	4	23	13	13	39	26	13	13
Copper	240,000	mg/kg	1	9	11	27	2	17	31	4	<1	6	71	5
Lead	1,500	mg/kg	1	39	25	17	2	33	120	14	9	62	31	13
Mercury	730	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	1.1	<0.1	<0.1
Nickel	6,000	mg/kg	1	6	8	40	<1	6	7	1	1	1	3	3
Zinc	400,000	mg/kg	1	20	27	28	3	140	53	6	7	16	29	8
Cyanide	1,500	mg/kg	0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorobutanesulfonic acid		µg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanesulfonic acid		µg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS		µg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoroheptanesulfonic acid		µg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanesulfonic acidPFOS		µg/kg	0.1	-	0.4	0.2	<0.1	1.1	1.2	<0.1	0.2	<0.1	0.5	0.1
Perfluorodecanesulfonic acid		µg/kg	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorobutanoic acid		µg/kg	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluoropentanoic acid		µg/kg	0.2	-	<0.2	<0.2	<0.2	0.3	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorohexanoic acid		µg/kg	0.1	-	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoroheptanoic acid		µg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanoic acid PFOA	50,000	µg/kg	0.1	-	<0.1	<0.1	<0.1	0.2	0.4	<0.1	<0.1	<0.1	0.2	<0.1
Perfluorononanoic acid		µg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorodecanoic acid		µg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluoroundecanoic acid		µg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorododecanoic acid		µg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorotridecanoic acid		µg/kg	0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorotetradecanoic acid		µg/kg	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4:2 FTS		µg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
6:2 FTS		µg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
8:2 FTS		µg/kg	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
10:2 FTS		µg/kg	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorooctane sulfonamide		µg/kg	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-Methyl perfluorooctane sulfonamide		µg/kg	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-Ethyl perfluorooctanesulfonamide		µg/kg	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-Me perfluorooctanesulfonamidoethanol		µg/kg	1	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
N-Et perfluorooctanesulfonamidoethanol		µg/kg	5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
MePerfluorooctanesulf-amid oacetic acid		µg/kg	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
EtPerfluorooctanesulfamid oacetic acid		µg/kg	0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total Positive PFHxS & PFOS	20,000	µg/kg	0.1	-	0.4	0.2	<0.1	1.1	1.2	<0.1	0.2	<0.1	0.5	0.1
Total Positive PFOS & PFOA		µg/kg	0.1	-	0.4	0.2	<0.1	1.4	1.6	<0.1	0.2	<0.1	0.7	0.1
Total Positive PFAS		µg/kg	0.1	-	0.4	0.2	<0.1	1.8	1.6	<0.1	0.2	<0.1	0.7	0.1
Sample mass tested		g		Approx. 35g	Approx. 35g	Approx. 45g	Approx. 45g	Approx. 40g	Approx. 30g	Approx. 35g	Approx. 40g	Approx. 45g	Approx. 30g	Approx. 40g
Sample Description		-		Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Red coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	ND	-		No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected
Trace Analysis	ND	-		No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Compounds	WFU_BH043	WFU_BH043	WFU_BH043	WFU_BH044	WFU_BH044	WFU_BH044	WFU_BH045	WFU_BH045	WFU_BH045	WFU_BH045	WFU_BH046	WFU_BH046	WFU_BH046	WFU_BH047	WFU_BH047	WFU_BH047	WFU_BH048	WFU_BH048	WFU_BH048	WFU_BH049	WFU_BH049	WFU_BH049
	SMEC 2020																					
Depth (m)	0.0-0.1	0.4-0.5	0.7-0.8	0.0-0.1	1.0-1.1	2.0-2.1	0.0-0.1	0.4-0.5	1.0-1.1	2.0-2.1	0.0-0.1	0.4-0.5	1.0-1.1	0.0-0.1	1.0-1.1	2.0-2.1	0.0-0.1	0.4-0.5	1.0-1.1	0.0-0.1	0.4-0.5	1.0-1.1
Date	9/07/2020	9/07/2020	9/07/2020	9/07/2020	9/07/2020	9/07/2020	20/07/2020	20/07/2020	20/07/2020	16/09/2020	16/09/2020	16/09/2020	16/09/2020	13/07/2020	13/07/2020	13/07/2020	9/07/2020	9/07/2020	9/07/2020	9/07/2020	9/07/2020	9/07/2020
Volatile Organic Compounds																						
Dichlorodifluoromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bromochloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
chloroform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2-dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
carbon tetrachloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dibromoethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
chlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bromoform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
m+p-xylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
styrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-trichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
isopropylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bromobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-propyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-chlorotoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-chlorotoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-trimethyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tert-butyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-trimethyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sec-butyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-isopropyl toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-butyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-trichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
hexachlorobutadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-trichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Recoverable Hydrocarbons / Monocyclic Aromatic Hydrocarbons																						
TRH C6 - C9	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10
TRH C6 - C10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10
vTPH C6 - C10 lessBTEX (F1)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10
Benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
m+p-xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
o-Xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
naphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total +ve Xylenes	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
TRH C10 - C14	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50
TRH C15 - C28	<100	<100	<100	<100	<100	<100	<100	260	<100	<100	<100	<100	380	<100	<100	<100	<100	<100	<100	<100	-	<100
TRH C29 - C36	<100	<100	<100	<100	<100	<100	<100	240	<100	<100	<100	<100	520	<100	<100	<100	<100	180	<100	130	-	<100
TRH >C10-C16	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50
TRH >C10 - C16less Naphthalene (F2)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50
TRH >C16-C34	<100	<100	<100	<100	<100	120	120	400	<100	<100	<100	<100	730	<100	<100	<100	110	210	<100	160	-	120
TRH >C34-C40	<100	<100	<100	<100	<100	<100	<100	240	<100	<100	<100	<100	410	<100	<100	<100	<100	130	<100	100	-	<100
Total +ve TRH (>C10-C40)	<50	<50	<50	<50	<50	120	120	640	<50	<50	<50	<50	1,140	<50	<50	<50	110	340	<50	260	-	120
Polycyclic Aromatic Hydrocarbons																						
Naphthalene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Acenaphthylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	<0.5	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Acenaphthene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Fluorene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Phenanthrene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	7.2	<0.5	<0.5	0.5	0.9	2.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Anthracene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	2.8	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Fluoranthene	1.2	<0.5	<0.5	1.0	<0.5	1.6	2.9	13.9	<0.5	<0.5	1.2	3.1	10.3	0.8	<0.5	<0.5	0.7	<0.5	<0.5	1.3	-	1.2
Pyrene	1.2	<0.5	<0.5	1.0	<0.5	1.8	2.8	13.4	<0.5	<0.5	1.2	3.3	10.3	0.9	<0.5	<0.5	0.8	<0.5	<0.5	1.5	-	1.4
Benzo(a)anthracene	0.5	<0.5	<0.5	<0.5	<0.5	0.7	1.3	6.7	<0.5	<0.5	0.5	1.5	5.6	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	-	0.8
Chrysene	0.6	<0.5	<0.5	<0.5	<0.5	0.8	1.2	5.9	<0.5	<0.5	0.5	1.4	5.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	-	0.9
Benzo(b+j)fluoranthene	0.7	<0.5	<0.5	<0.5	<0.5	0.9	1.9	7.7	<0.5	<0.5	0.5	2.5	10.6	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	-	0.9
Benzo(k)fluoranthene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	2.9	<0.5	<0.5	<0.5	1.0	3.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Benzo(b,j+k)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	0.5	<0.5	<0.5	<0.5	<0.5	0.8	1.6	6.8	<0.5	<0.5	<0.5	2.2	9.6	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	-	0.8
Indeno(1,2,3-c,d)pyrene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	3.0	<0.5	<0.5	<0.5	1.3	6.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Dibenzo(a,h)anthracene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
Benzo(g,h,i)perylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	3.4	<0.5	<0.5	<0.5	1.7	8.2	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	-	<0.5
Total +vePAH's	4.7	<0.5	<0.5	2.0	<0.5	6.6	16.2	76.2	<0.5	<0.5	4.4	18.9	77.3	4.7	<0.5	<0.5	1.5	<0.5	<0.5	6.7	-	6.0
Benzo(a)pyrene TEQ calc (zero)	0.6	<0.5	<0.5	<0.5	<0.5	1.0	2.1	9.8	<0.5	<0.5	<0.5	2.9	13.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	-	1.0
Benzo(a)pyrene TEQ calc(half)	0.9	0.6	0.6	0.6	0.6	1.3	2.3	9.8	0.6	0.6	0.6	3.1	13.5	1.1	0.6	0.6	0.6	0.6	0.6	1.4	-	1.3
Benzo(a)pyrene TEQ calc(PQL)	1.2	1.2	1.2	1.2	1.2	1.6	2.6	9.8	1.2	1.2	1.2	3.4	13.5	1.4	1.2	1.2	1.2	1.2	1.2	1.7	-	1.6
Organochlorine Pesticides																						
alpha-BHC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HCB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
beta-BHC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor Epoxide	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-Chlordane	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-chlordane	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pp-DDE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pp-DDD	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin Aldehyde	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pp-DDT	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total +ve DDT+DDD+DDE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Polychlorinated Biphenyls																						
Aroclor 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total +ve PCBs (1016-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Metals																						
Arsenic	<5	<5	<5	8	<5	11	<5	<5	<5	<5	<5	<5	<5	8	<5	<5	<5	<5	24	9	-	6
Cadmium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
Chromium	9	5	13	28	16	27	15	30	20	4	12	7	8	16	52	4	12	2	45	24	-	37
Copper	18	<5	5	11	<5	16	20	32	36	<5	19	24	42	15	7	<5	7	<5	<5	22	-	18
Lead	53	24	28	46	14	74	124	74	46	12	144	65	52	62	5	8	18	16	16	83	-	61
Mercury	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1
Nickel	4	<2	<2	3	<2	4	13	34	60	<2	9	3	6	3	<2	<2	4	<2	3	5	-	5
Zinc	51	9	10	35	5	33	58	60	43	<5	74	34	31	41	<5	26	22	<5	<5	72	-	31
Cyanide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Per- and Polyfluoroalkyl Substances																						
Perfluorobutanesulfonic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanesulfonic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid - PFHxS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanesulfonic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acidPFOS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoic acid PFOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:2 FTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:2 FTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:2 FTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:2 FTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Methyl perfluorooctane sulfonamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Ethyl perfluorooctanesulfonamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me perfluorooctanesulfonamidoethanol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et perfluorooctanesulfonamidoethanol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MePerfluorooctanesulf-amid oacetic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EtPerfluorooctanesulfamid oacetic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Positive PFHxS & PFOS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Positive PFOS & PFOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Positive PFAS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos																						
Sample mass tested																						
Sample Description																						
Asbestos ID in soil	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trace Analysis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Compounds	WFU_BH049	WFU_BH050	WFU_BH050	WFU_BH050	WFU_BH050	WFU_BH051	WFU_BH051	WFU_BH051	WFU_BH053	WFU_BH053	WFU_BH054	WFU_BH054	WFU_BH055	WFU_BH055	WFU_BH055	WFU_BH056	WFU_BH056	WFU_BH056	WFU_BH057	WFU_BH057	WFU_BH057
Depth (m)	2.0-2.1	0.0-0.1	0.4-0.5	1.0-1.1	3.0-3.1	0.0-0.1	2.0-2.1	3.0-3.1	0.0-0.1	0.4-0.45	0.0-0.1	0.4-0.5	0.0-0.1	0.4-0.5	1.0-1.1	0.0-0.1	0.4-0.5	2.0-2.1	0.0-0.1	1.0-1.1	2.0-2.1
Date	9/07/2020	14/09/2020	14/09/2020	14/09/2020	9/07/2020	9/07/2020	9/07/2020	9/07/2020	10/07/2020	10/07/2020	10/07/2020	10/07/2020	10/07/2020	10/07/2020	10/07/2020	16/09/2020	16/09/2020	16/09/2020	20/07/2020	20/07/2020	20/07/2020
Volatile Organic Compounds																					
Dichlorodifluoromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl Chloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorofluoromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-Dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,2-dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,2-dichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bromochloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
chloroform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2,2-dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1-trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1-dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cyclohexane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
carbon tetrachloride	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromomethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trichloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bromodichloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
trans-1,3-dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
cis-1,3-dichloropropene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2-trichloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-dichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
dibromochloromethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dibromoethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tetrachloroethene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,1,2-tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
chlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ethylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bromoform	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
m+p-xylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
styrene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,1,2,2-tetrachloroethane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
o-Xylene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-trichloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
isopropylbenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
bromobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-propyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2-chlorotoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-chlorotoluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3,5-trimethyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
tert-butyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-trimethyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,3-dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
sec-butyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,4-dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4-isopropyl toluene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
n-butyl benzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2-dibromo-3-chloropropane	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,4-trichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
hexachlorobutadiene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1,2,3-trichlorobenzene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Recoverable Hydrocarbons / Monocyclic Aromatic Hydrocarbons																					
TRH C6 - C9	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
TRH C6 - C10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
vTPH C6 - C10 lessBTEX (F1)	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m+p-xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
o-Xylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
naphthalene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total +ve Xylenes	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C10 - C14	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH C15 - C28	<100	<100	<100	<100	<100	<100	<100	<100	120	<100	<100	<100	160	900	<100	<100	<100	<100	<100	140	<100
TRH C29 - C36	180	<100	<100	<100	<100	<100	<100	<100	210	<100	<100	<100	220	750	<100	<100	<100	<100	<100	140	<100
TRH >C10-C16	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH >C10 - C16less Naphthalene (F2)	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
TRH >C16-C34	200	<100	<100	<100	<100	<100	120	<100	220	<100	<100	<100	270	1,420	<100	<100	<100	<100	<100	240	<100
TRH >C34-C40	130	<100	<100	<100	<100	<100	<100	<100	180	<100	<100	<100	160	470	<100	<100	<100	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	330	<50	<50	<50	<50	<50	120	<50	400	<50	<50	<50	430	1,890	<50	<50	<50	<50	<50	240	<50
Polycyclic Aromatic Hydrocarbons																					
Naphthalene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.2	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	22.3	<0.5	1.1	<0.5	<0.5	<0.5	3.8	<0.5
Anthracene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	6.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	<0.5
Fluoranthene	1.4	0.8	1.7	0.6	<0.5	<0.5	3.4	<0.5	0.8	<0.5	0.8	<0.5	3.5	39.7	<0.5	3.5	1.0	<0.5	<0.5	5.8	<0.5
Pyrene	1.4	0.9	1.8	0.7	<0.5	<0.5	3.2	<0.5	0.8	<0.5	0.9	<0.5	3.4	37.4	<0.5	4.0	1.2	<0.5	<0.5	6.3	<0.5
Benzo(a)anthracene	0.6	<0.5	0.8	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.5	18.7	<0.5	1.7	0.5	<0.5	<0.5	3.2	<0.5
Chrysene	0.8	<0.5	0.8	<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	1.6	18.2	<0.5	1.8	0.5	<0.5	<0.5	3.0	<0.5
Benzo(b+j)fluoranthene	0.8	0.6	1.1	<0.5	<0.5	<0.5	1.4	<0.5	0.6	0.6	0.6	<0.5	2.2	23.2	<0.5	2.5	0.8	<0.5	<0.5	4.2	<0.5
Benzo(k)fluoranthene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	9.2	<0.5	1.0	<0.5	<0.5	<0.5	1.8	<0.5
Benzo(b,j+k)fluoranthene	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Benzo(a)pyrene	0.6	<0.5	1.0	<0.5	<0.5	<0.5	1.5	<0.5	<0.5	0.7	0.5	<0.5	1.8	19.2	<0.5	2.2	0.8	<0.5	<0.5	4.0	<0.5
Indeno(1,2,3-c,d)pyrene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	9.9	<0.5	1.1	<0.5	<0.5	<0.5	1.8	<0.5
Dibenzo(a,h)anthracene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	2.4	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	<0.5
Benzo(g,h,i)perylene	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.2	11.5	<0.5	1.3	<0.5	<0.5	<0.5	2.2	<0.5
Total +vePAH's	5.6	2.3	7.7	1.3	<0.5	<0.5	16.4	<0.5	2.2	1.3	2.8	<0.5	18.5	222	<0.5	20.2	4.8	<0.5	<0.5	37.8	<0.5
Benzo(a)pyrene TEQ calc (zero)	0.7	<0.5	1.2	<0.5	<0.5	<0.5	1.9	<0.5	<0.5	0.8	0.6	<0.5	2.4	28.0	<0.5	2.9	0.9	<0.5	<0.5	5.6	<0.5
Benzo(a)pyrene TEQ calc(half)	1.0	0.6	1.5	0.6	0.6	0.6	2.2	0.6	0.6	1.1	0.9	0.6	2.6	28.0	0.6	3.1	1.2	0.6	0.6	5.6	0.6
Benzo(a)pyrene TEQ calc(PQL)	1.4	1.2	1.8	1.2	1.2	1.2	2.4	1.2	1.2	1.4	1.2	1.2	2.9	28.0	1.2	3.4	1.5	1.2	1.2	5.6	1.2
Organochlorine Pesticides																					
alpha-BHC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
HCB	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
beta-BHC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor Epoxide	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-Chlordane	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-chlordane	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan I	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pp-DDE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan II	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pp-DDD	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin Aldehyde	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
pp-DDT	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total +ve DDT+DDD+DDE	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Polychlorinated Biphenyls																					
Aroclor 1016	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1221	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1232	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1242	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1248	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Aroclor 1260	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total +ve PCBs (1016-1260)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Heavy Metals																					
Arsenic	7	9	7	6	9	6	9	7	<5	<5	<5	<5	<5	<5	<5	6	6	<5	<5	<5	5
Cadmium	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium	18	34	31	33	28	11	24	40	8	16	9	7	9	13	6	19	15	44	5	19	18
Copper	26	12	7	7	23	12	15	<5	18	<5	17	<5	26	299	<5	18	7	6	<5	34	<5
Lead	100	48	22	38	33	56	36	21	133	42	118	12	114	116	9	50	23	17	<5	76	28
Mercury	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1
Nickel	4	4	3	3	3	3	3	<2	3	7	5	<2	5	6	<2	3	2	4	<2	11	<2
Zinc	51	35	12	10	24	38	20	6	67	12	61	<5	89	228	<5	34	9	9	<5	61	<5
Cyanide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Per- and Polyfluoroalkyl Substances																					
Perfluorobutanesulfonic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanesulfonic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanesulfonic acid - PFHxS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanesulfonic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanesulfonic acidPFOS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanesulfonic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorobutanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoropentanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorohexanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroheptanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctanoic acid PFOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorononanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorodecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluoroundecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorododecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotridecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorotetradecanoic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:2 FTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:2 FTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:2 FTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:2 FTS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Perfluorooctane sulfonamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Methyl perfluorooctane sulfonamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Ethyl perfluorooctanesulfonamide	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Me perfluorooctanesulfonamidoethanol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
N-Et perfluorooctanesulfonamidoethanol	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MePerfluorooctanesulf-amid oacetic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EtPerfluorooctanesulfamid oacetic acid	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Positive PFHxS & PFOS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Positive PFOS & PFOA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Positive PFAS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Asbestos																					
Sample mass tested																					
Sample Description																					
Asbestos ID in soil	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Trace Analysis	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes

Bold	Exceeds human health investigation levels for commercial/industrial land use

Appendix B – Laboratory certificates

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 262787

Client Details

Client	Jacobs Group (Australia) Pty Ltd
Attention	Amanda Mullen, Michael Stacey
Address	Level 7, 177 Pacific Highway, North Sydney, NSW, 2060

Sample Details

Your Reference	**IA216715**
Number of Samples	22 Soil
Date samples received	25/02/2021
Date completed instructions received	25/02/2021

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	04/03/2021
Date of Issue	04/03/2021

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

Asbestos Approved By
Analysed by Asbestos Approved Identifier: Panika Wongchanda
Authorised by Asbestos Approved Signatory: Lucy Zhu

Results Approved By
Alexander Mitchell Maclean, Senior Chemist
Diego Bigolin, Team Leader, Inorganics
Dragana Tomas, Senior Chemist
Ken Nguyen, Reporting Supervisor
Lucy Zhu, Asbestos Supervisor
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

VOCs in soil						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Dichlorodifluoromethane	mg/kg	<1	<1	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1	<1	<1
chloroform	mg/kg	<1	<1	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
dibromomethane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1

VOCs in soil						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
bromoform	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
styrene	mg/kg	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1	<1	<1	<1
isopropylbenzene	mg/kg	<1	<1	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
Surrogate Dibromofluorometha	%	102	102	102	103	104
Surrogate aaa-Trifluorotoluene	%	85	90	96	72	75
Surrogate Toluene-d_8	%	100	98	99	100	100
Surrogate 4-Bromofluorobenzene	%	99	98	99	99	100

VOCs in soil						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
Dichlorodifluoromethane	mg/kg	<1	<1	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1	<1	<1
chloroform	mg/kg	<1	<1	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1	<1	<1
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
dibromomethane	mg/kg	<1	<1	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1

VOCs in soil						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
bromoform	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
styrene	mg/kg	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1	<1	<1	<1
isopropylbenzene	mg/kg	<1	<1	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1	<1	<1
Surrogate Dibromofluorometha	%	104	102	102	103	103
Surrogate aaa-Trifluorotoluene	%	78	79	85	97	82
Surrogate Toluene-d_8	%	99	100	99	100	100
Surrogate 4-Bromofluorobenzene	%	99	100	98	100	100

VOCs in soil		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date extracted	-	26/02/2021
Date analysed	-	02/03/2021
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1

VOCs in soil		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
bromoform	mg/kg	<1
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	104
Surrogate aaa-Trifluorotoluene	%	86
Surrogate Toluene-d_8	%	100
Surrogate 4-Bromofluorobenzene	%	99

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	85	90	96	72	75

vTRH(C6-C10)/BTEXN in Soil						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	02/03/2021	02/03/2021	02/03/2021	02/03/2021	02/03/2021
TRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25	<25	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Total +ve Xylenes	mg/kg	<3	<3	<3	<3	<3
Surrogate aaa-Trifluorotoluene	%	78	79	85	97	82

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date extracted	-	26/02/2021
Date analysed	-	02/03/2021
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<3
Surrogate aaa-Trifluorotoluene	%	86

svTRH (C10-C40) in Soil						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	26/02/2021	26/02/2021	27/02/2021	26/02/2021	26/02/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	190	<100	390	<100	320
TRH C_{29} - C_{36}	mg/kg	<100	<100	410	<100	480
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	260	<100	310	<100	650
TRH >C_{34} -C_{40}	mg/kg	120	<100	410	<100	470
Total +ve TRH (>C10-C40)	mg/kg	380	<50	720	<50	1,100
Surrogate o-Terphenyl	%	95	88	100	84	98

svTRH (C10-C40) in Soil						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
TRH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TRH C_{15} - C_{28}	mg/kg	170	<100	<100	<100	<100
TRH C_{29} - C_{36}	mg/kg	150	<100	<100	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50	<50	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH >C_{16} -C_{34}	mg/kg	280	<100	<100	<100	<100
TRH >C_{34} -C_{40}	mg/kg	140	<100	<100	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	420	<50	<50	<50	<50
Surrogate o-Terphenyl	%	95	89	88	89	92

svTRH (C10-C40) in Soil		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date extracted	-	26/02/2021
Date analysed	-	26/02/2021
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	91

PAHs in Soil						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
Naphthalene	mg/kg	<0.1	<0.1	3.1	<0.1	0.2
Acenaphthylene	mg/kg	<0.1	<0.1	1.2	<0.1	0.5
Acenaphthene	mg/kg	<0.1	<0.1	1	<0.1	0.1
Fluorene	mg/kg	<0.1	<0.1	1.5	<0.1	0.2
Phenanthrene	mg/kg	<0.1	0.3	15	<0.1	3.5
Anthracene	mg/kg	<0.1	<0.1	4.1	<0.1	0.8
Fluoranthene	mg/kg	0.2	0.6	15	<0.1	8.6
Pyrene	mg/kg	0.2	0.9	15	<0.1	8.6
Benzo(a)anthracene	mg/kg	0.1	0.5	9.6	<0.1	5.5
Chrysene	mg/kg	0.1	0.4	6.9	<0.1	4.4
Benzo(b,j+k)fluoranthene	mg/kg	0.2	0.8	11	<0.2	8.4
Benzo(a)pyrene	mg/kg	0.1	0.52	7.9	<0.05	5.0
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.1	3.7	<0.1	2.4
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1	1.2	<0.1	0.8
Benzo(g,h,i)perylene	mg/kg	<0.1	0.4	4.3	<0.1	2.7
Total +ve PAH's	mg/kg	0.92	4.6	100	<0.05	52
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	0.8	12	<0.5	7.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	0.8	12	<0.5	7.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	0.8	12	<0.5	7.5
Surrogate p-Terphenyl-d14	%	106	107	104	106	99

PAHs in Soil						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.5	<0.1	<0.1	0.1	0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	1.8	<0.1	<0.1	0.3	0.2
Anthracene	mg/kg	0.6	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	7.9	0.3	<0.1	0.9	0.6
Pyrene	mg/kg	9.3	0.4	<0.1	0.9	0.8
Benzo(a)anthracene	mg/kg	7.9	0.4	<0.1	0.7	0.7
Chrysene	mg/kg	6.4	0.2	<0.1	0.5	0.5
Benzo(b,j+k)fluoranthene	mg/kg	12	0.6	<0.2	0.9	1
Benzo(a)pyrene	mg/kg	7.9	0.4	0.05	0.55	0.75
Indeno(1,2,3-c,d)pyrene	mg/kg	2.6	0.2	<0.1	0.3	0.4
Dibenzo(a,h)anthracene	mg/kg	1	<0.1	<0.1	0.1	0.2
Benzo(g,h,i)perylene	mg/kg	3.0	<0.1	<0.1	0.3	0.5
Total +ve PAH's	mg/kg	61	2.4	0.05	5.5	6.0
Benzo(a)pyrene TEQ calc (zero)	mg/kg	11	<0.5	<0.5	0.9	1.1
Benzo(a)pyrene TEQ calc(half)	mg/kg	11	0.5	<0.5	0.9	1.1
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	11	0.6	<0.5	0.9	1.1
Surrogate p-Terphenyl-d14	%	107	102	103	104	114

PAHs in Soil		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date extracted	-	26/02/2021
Date analysed	-	01/03/2021
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.5
Pyrene	mg/kg	0.6
Benzo(a)anthracene	mg/kg	0.5
Chrysene	mg/kg	0.4
Benzo(b,j+k)fluoranthene	mg/kg	0.8
Benzo(a)pyrene	mg/kg	0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.3
Dibenzo(a,h)anthracene	mg/kg	0.1
Benzo(g,h,i)perylene	mg/kg	0.3
Total +ve PAH's	mg/kg	4.0
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.8
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.8
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.8
Surrogate p-Terphenyl-d14	%	104

Organochlorine Pesticides in soil						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	107	99	108	99

Organochlorine Pesticides in soil						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	105	103	103	104	114

Organochlorine Pesticides in soil		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date extracted	-	26/02/2021
Date analysed	-	01/03/2021
alpha-BHC	mg/kg	<0.1
HCB	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Total +ve DDT+DDD+DDE	mg/kg	<0.1
Surrogate TCMX	%	106

PCBs in Soil						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	106	107	99	108	99

PCBs in Soil						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	105	103	103	104	114

PCBs in Soil		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date extracted	-	26/02/2021
Date analysed	-	01/03/2021
Aroclor 1016	mg/kg	<0.1
Aroclor 1221	mg/kg	<0.1
Aroclor 1232	mg/kg	<0.1
Aroclor 1242	mg/kg	<0.1
Aroclor 1248	mg/kg	<0.1
Aroclor 1254	mg/kg	<0.1
Aroclor 1260	mg/kg	<0.1
Total +ve PCBs (1016-1260)	mg/kg	<0.1
Surrogate TCMX	%	106

Acid Extractable metals in soil						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Arsenic	mg/kg	<4	<4	<4	<4	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	8	73	4	23
Copper	mg/kg	9	11	27	2	17
Lead	mg/kg	39	25	17	2	33
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	6	8	40	<1	6
Zinc	mg/kg	20	27	28	3	140

Acid Extractable metals in soil						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Arsenic	mg/kg	5	<4	7	6	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	13	13	39	26	13
Copper	mg/kg	31	4	<1	6	71
Lead	mg/kg	120	14	9	62	31
Mercury	mg/kg	0.1	<0.1	<0.1	1.1	<0.1
Nickel	mg/kg	7	1	1	1	3
Zinc	mg/kg	53	6	7	16	29

Acid Extractable metals in soil		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date prepared	-	26/02/2021
Date analysed	-	26/02/2021
Arsenic	mg/kg	<4
Cadmium	mg/kg	<0.4
Chromium	mg/kg	13
Copper	mg/kg	5
Lead	mg/kg	13
Mercury	mg/kg	<0.1
Nickel	mg/kg	3
Zinc	mg/kg	8

Moisture						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
Moisture	%	14	20	8.5	11	10

Moisture						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
Moisture	%	29	16	22	15	25

Moisture		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date prepared	-	26/02/2021
Date analysed	-	01/03/2021
Moisture	%	12

Misc Soil - Inorg						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Total Cyanide	mg/kg	<0.5	0.6	<0.5	<0.5	<0.5

Misc Soil - Inorg						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Total Cyanide	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Misc Soil - Inorg		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date prepared	-	26/02/2021
Date analysed	-	26/02/2021
Total Cyanide	mg/kg	<0.5

Asbestos ID - soils						
Our Reference		262787-1	262787-3	262787-5	262787-7	262787-9
Your Reference	UNITS	QAQC1	BH01_B	BH01_D	BH02_A	BH02_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 45g	Approx. 45g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown fine-grained soil & rocks	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils						
Our Reference		262787-11	262787-14	262787-16	262787-18	262787-19
Your Reference	UNITS	BH03_A	BH03_D	BH05_B	BH05_D	BH04_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	01/03/2021	01/03/2021	01/03/2021	01/03/2021	01/03/2021
Sample mass tested	g	Approx. 30g	Approx. 35g	Approx. 40g	Approx. 45g	Approx. 30g
Sample Description	-	Brown fine-grained soil & rocks	Brown coarse-grained soil & rocks	Red coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils		
Our Reference		262787-21
Your Reference	UNITS	BH04_C
Date Sampled		24/02/2021
Type of sample		Soil
Date analysed	-	01/03/2021
Sample mass tested	g	Approx. 40g
Sample Description	-	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

PFAS in Soils Extended						
Our Reference		262787-3	262787-5	262787-7	262787-9	262787-11
Your Reference	UNITS	BH01_B	BH01_D	BH02_A	BH02_C	BH03_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoroheptanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	0.4	0.2	<0.1	1.1	1.2
Perfluorodecanesulfonic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorobutanoic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluoropentanoic acid	µg/kg	<0.2	<0.2	<0.2	0.3	<0.2
Perfluorohexanoic acid	µg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Perfluoroheptanoic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1	<0.1	<0.1	0.2	0.4
Perfluorononanoic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorodecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluoroundecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorododecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorotridecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorotetradecanoic acid	µg/kg	<5	<5	<5	<5	<5
4:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
10:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorooctane sulfonamide	µg/kg	<1	<1	<1	<1	<1
N-Methyl perfluorooctane sulfonamide	µg/kg	<1	<1	<1	<1	<1
N-Ethyl perfluorooctanesulfon amide	µg/kg	<1	<1	<1	<1	<1
N-Me perfluorooctanesulfonamid oethanol	µg/kg	<1	<1	<1	<1	<1
N-Et perfluorooctanesulfonamid oethanol	µg/kg	<5	<5	<5	<5	<5
MePerfluorooctanesulf- amid oacetic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EtPerfluorooctanesulf amid oacetic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	105	107	101	104	103
Surrogate $^{13}C_2$ *PFOA*	%	99	103	104	97	106
Extracted ISTD $^{13}C_3$ *PFBS*	%	98	101	91	96	87
Extracted ISTD $^{18}O_2$ *PFHxS*	%	114	113	104	110	103
Extracted ISTD $^{13}C_4$ *PFOS*	%	111	113	107	116	112
Extracted ISTD $^{13}C_4$ *PFBA*	%	111	115	105	111	107

PFAS in Soils Extended						
Our Reference		262787-3	262787-5	262787-7	262787-9	262787-11
Your Reference	UNITS	BH01_B	BH01_D	BH02_A	BH02_C	BH03_A
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Extracted ISTD $^{13}C_3$ *PFPeA*	%	106	103	94	99	91
Extracted ISTD $^{13}C_2$ *PFHxA*	%	116	123	113	116	115
Extracted ISTD $^{13}C_4$ *PFHpA*	%	106	115	103	111	107
Extracted ISTD $^{13}C_4$ *PFOA*	%	118	127	102	126	113
Extracted ISTD $^{13}C_5$ *PFNA*	%	117	126	105	124	117
Extracted ISTD $^{13}C_2$ *PFDA*	%	127	133	103	127	127
Extracted ISTD $^{13}C_2$ *PFUnDA*	%	143	145	111	148	141
Extracted ISTD $^{13}C_2$ *PFDoDA*	%	160	154	125	156	142
Extracted ISTD $^{13}C_2$ *PFTeDA*	%	98	90	92	89	88
Extracted ISTD $^{13}C_2$ *4:2FTS*	%	111	136	103	113	125
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	123	171	111	148	159
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	141	#	90	194	191
Extracted ISTD $^{13}C_8$ *FOSA*	%	100	110	97	112	103
Extracted ISTD d_3 *N MeFOSA*	%	108	100	100	110	99
Extracted ISTD d_5 *N EtFOSA*	%	117	108	112	116	98
Extracted ISTD d_7 *N MeFOSE*	%	114	97	114	110	102
Extracted ISTD d_9 *N EtFOSE*	%	110	92	113	107	89
Extracted ISTD d_3 *N MeFOSAA*	%	146	#	110	#	#
Extracted ISTD d_5 *N EtFOSAA*	%	164	#	103	#	#
Total Positive PFHxS & PFOS	µg/kg	0.4	0.2	<0.1	1.1	1.2
Total Positive PFOS & PFOA	µg/kg	0.4	0.2	<0.1	1.4	1.6
Total Positive PFAS	µg/kg	0.4	0.2	<0.1	1.8	1.6

PFAS in Soils Extended						
Our Reference		262787-14	262787-16	262787-18	262787-19	262787-21
Your Reference	UNITS	BH03_D	BH05_B	BH05_D	BH04_A	BH04_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Date analysed	-	26/02/2021	26/02/2021	26/02/2021	26/02/2021	26/02/2021
Perfluorobutanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorohexanesulfonic acid - PFHxS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoroheptanesulfonic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanesulfonic acid PFOS	µg/kg	<0.1	0.2	<0.1	0.5	0.1
Perfluorodecanesulfonic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorobutanoic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluoropentanoic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorohexanoic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoroheptanoic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorooctanoic acid PFOA	µg/kg	<0.1	<0.1	<0.1	0.2	<0.1
Perfluorononanoic acid	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluorodecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluoroundecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorododecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorotridecanoic acid	µg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Perfluorotetradecanoic acid	µg/kg	<5	<5	<5	<5	<5
4:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
6:2 FTS	µg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
8:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
10:2 FTS	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Perfluorooctane sulfonamide	µg/kg	<1	<1	<1	<1	<1
N-Methyl perfluorooctane sulfonamide	µg/kg	<1	<1	<1	<1	<1
N-Ethyl perfluorooctanesulfon amide	µg/kg	<1	<1	<1	<1	<1
N-Me perfluorooctanesulfonamid oethanol	µg/kg	<1	<1	<1	<1	<1
N-Et perfluorooctanesulfonamid oethanol	µg/kg	<5	<5	<5	<5	<5
MePerfluorooctanesulf- amid oacetic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
EtPerfluorooctanesulf amid oacetic acid	µg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate $^{13}C_8$ *PFOS*	%	100	97	108	102	106
Surrogate $^{13}C_2$ *PFOA*	%	101	102	96	100	96
Extracted ISTD $^{13}C_3$ *PFBS*	%	89	77	91	88	91
Extracted ISTD $^{18}O_2$ *PFHxS*	%	102	92	103	103	109
Extracted ISTD $^{13}C_4$ *PFOS*	%	108	93	105	109	105
Extracted ISTD $^{13}C_4$ *PFBA*	%	103	84	101	102	102

PFAS in Soils Extended						
Our Reference		262787-14	262787-16	262787-18	262787-19	262787-21
Your Reference	UNITS	BH03_D	BH05_B	BH05_D	BH04_A	BH04_C
Date Sampled		24/02/2021	24/02/2021	24/02/2021	24/02/2021	24/02/2021
Type of sample		Soil	Soil	Soil	Soil	Soil
Extracted ISTD $^{13}C_3$ *PFPeA*	%	88	75	94	90	91
Extracted ISTD $^{13}C_2$ *PFHxA*	%	111	90	110	109	110
Extracted ISTD $^{13}C_4$ *PFHpA*	%	99	82	103	103	102
Extracted ISTD $^{13}C_4$ *PFOA*	%	103	86	112	109	109
Extracted ISTD $^{13}C_5$ *PFNA*	%	109	90	112	109	110
Extracted ISTD $^{13}C_2$ *PFDA*	%	106	87	116	115	112
Extracted ISTD $^{13}C_2$ *PFUnDA*	%	134	89	124	132	125
Extracted ISTD $^{13}C_2$ *PFDoDA*	%	141	100	142	102	140
Extracted ISTD $^{13}C_2$ *PFTeDA*	%	93	85	99	92	94
Extracted ISTD $^{13}C_2$ *4:2FTS*	%	105	82	113	102	103
Extracted ISTD $^{13}C_2$ *6:2FTS*	%	117	95	136	127	122
Extracted ISTD $^{13}C_2$ *8:2FTS*	%	111	85	139	121	117
Extracted ISTD $^{13}C_8$ *FOSA*	%	97	96	99	96	98
Extracted ISTD d_3 *N MeFOSA*	%	104	96	105	103	100
Extracted ISTD d_5 *N EtFOSA*	%	109	103	110	91	109
Extracted ISTD d_7 *N MeFOSE*	%	109	106	106	110	105
Extracted ISTD d_9 *N EtFOSE*	%	107	104	107	91	108
Extracted ISTD d_3 *N MeFOSAA*	%	112	66	116	118	113
Extracted ISTD d_5 *N EtFOSAA*	%	116	70	114	129	116
Total Positive PFHxS & PFOS	µg/kg	<0.1	0.2	<0.1	0.5	0.1
Total Positive PFOS & PFOA	µg/kg	<0.1	0.2	<0.1	0.7	0.1
Total Positive PFAS	µg/kg	<0.1	0.2	<0.1	0.7	0.1

Method ID	Methodology Summary
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Inorg-014	Cyanide - free, total, weak acid dissociable by segmented flow analyser (in line dialysis with colourimetric finish). Solids/Filters and sorbents are extracted in a caustic media prior to analysis. Impingers are pH adjusted as required prior to analysis. Cyanides amenable to Chlorination - samples are analysed untreated and treated with hyperchlorite to assess the potential for chlorination of cyanide forms. Based on APHA latest edition, 4500-CN_G,H.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	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-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Org-021	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. Note, the Total +ve PCBs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PCBs" is simply a sum of the positive individual PCBs.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS/GC-MSMS.

Method ID	Methodology Summary
Org-022/025	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-MS/GC-MSMS. Note, the Total +ve reported DDD+DDE+DDT PQL is reflective of the lowest individual PQL and is therefore simply a sum of the positive individually report DDD+DDE+DDT.
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	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-023	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.

Method ID	Methodology Summary
Org-029	Soil samples are extracted with basified Methanol. Waters and soil extracts are directly injected and/or concentrated/extracted using SPE. TCLPs/ASLP leachates are centrifuged, the supernatant is then analysed (including amendment with solvent) - as per the option in AS4439.3. Analysis is undertaken with LC-MS/MS. PFAS results include the sum of branched and linear isomers where applicable. Please note that PFAS results are corrected for Extracted Internal Standards (QSM 5.3 Table B-15 terminology), which are mass labelled analytes added prior to sample preparation to assess matrix effects and verify processing of the sample. PFAS analytes without a commercially available mass labelled analogue are corrected vs a closely eluting mass labelled PFAS compound. Surrogates are also reported, in this context they are mass labelled PFAS compounds added prior to extraction but are used as monitoring compounds only (not used for result correction). Envicarb (or similar) is used discretionally to remove interfering matrix components. Please contact the laboratory if estimates of Measurement Uncertainty are required as per WA DER.

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	262787-5
Date extracted	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			02/03/2021	3	02/03/2021	02/03/2021		02/03/2021	02/03/2021
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-023	<1	3	<1	<1	0	80	88
cis-1,2-dichloroethene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
chloroform	mg/kg	1	Org-023	<1	3	<1	<1	0	74	78
2,2-dichloropropane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-023	<1	3	<1	<1	0	80	88
1,1,1-trichloroethane	mg/kg	1	Org-023	<1	3	<1	<1	0	73	82
1,1-dichloropropene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	3	<0.2	<0.2	0	[NT]	[NT]
dibromomethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
trichloroethene	mg/kg	1	Org-023	<1	3	<1	<1	0	64	70
bromodichloromethane	mg/kg	1	Org-023	<1	3	<1	<1	0	78	87
trans-1,3-dichloropropene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	3	<0.5	<0.5	0	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-023	<1	3	<1	<1	0	74	83
1,2-dibromoethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-023	<1	3	<1	<1	0	75	83
1,1,1,2-tetrachloroethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
bromoform	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	3	<2	<2	0	[NT]	[NT]
styrene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	262787-5
o-Xylene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
bromobenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-023	102	3	102	102	0	102	103
Surrogate aaa-Trifluorotoluene	%		Org-023	99	3	90	89	1	79	90
Surrogate Toluene-d_8	%		Org-023	99	3	98	99	1	99	101
Surrogate 4-Bromofluorobenzene	%		Org-023	99	3	98	98	0	103	101

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	02/03/2021	02/03/2021		[NT]	[NT]
Dichlorodifluoromethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
cis-1,2-dichloroethene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
chloroform	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
2,2-dichloropropane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,1,1-trichloroethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,1-dichloropropene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
dibromomethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
trichloroethene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
bromodichloromethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
trans-1,3-dichloropropene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2-dibromoethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,1,1,2-tetrachloroethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
bromoform	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	21	<2	<2	0	[NT]	[NT]
styrene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
bromobenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-023	[NT]	21	104	103	1	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	21	86	96	11	[NT]	[NT]
Surrogate Toluene-d_8	%		Org-023	[NT]	21	100	99	1	[NT]	[NT]
Surrogate 4-Bromofluorobenzene	%		Org-023	[NT]	21	99	98	1	[NT]	[NT]

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	262787-5
Date extracted	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			02/03/2021	3	02/03/2021	02/03/2021		02/03/2021	02/03/2021
TRH C_6 - C_9	mg/kg	25	Org-023	<25	3	<25	<25	0	74	81
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	3	<25	<25	0	74	81
Benzene	mg/kg	0.2	Org-023	<0.2	3	<0.2	<0.2	0	77	84
Toluene	mg/kg	0.5	Org-023	<0.5	3	<0.5	<0.5	0	74	81
Ethylbenzene	mg/kg	1	Org-023	<1	3	<1	<1	0	76	81
m+p-xylene	mg/kg	2	Org-023	<2	3	<2	<2	0	72	80
o-Xylene	mg/kg	1	Org-023	<1	3	<1	<1	0	77	84
naphthalene	mg/kg	1	Org-023	<1	3	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	99	3	90	89	1	79	90

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	02/03/2021	02/03/2021		[NT]	[NT]
TRH C_6 - C_9	mg/kg	25	Org-023	[NT]	21	<25	<25	0	[NT]	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-023	[NT]	21	<25	<25	0	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	[NT]	21	<2	<2	0	[NT]	[NT]
o-Xylene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
naphthalene	mg/kg	1	Org-023	[NT]	21	<1	<1	0	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	[NT]	21	86	96	11	[NT]	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	262787-5
Date extracted	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	3	<50	<50	0	135	#
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	3	<100	<100	0	100	#
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	3	<100	<100	0	92	#
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	3	<50	<50	0	135	#
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	3	<100	<100	0	100	#
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	3	<100	<100	0	92	#
Surrogate o-Terphenyl	%		Org-020	86	3	88	86	2	100	96

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-020	[NT]	21	<50	<50	0	[NT]	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	[NT]	21	<50	<50	0	[NT]	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	[NT]	21	<100	<100	0	[NT]	[NT]
Surrogate o-Terphenyl	%		Org-020	[NT]	21	91	84	8	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	262787-5
Date extracted	-			03/03/2021	1	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			03/03/2021	1	01/03/2021	01/03/2021		01/03/2021	01/03/2021
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	101	#
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	104	#
Fluorene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	118	#
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	109	#
Anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.2	0	109	#
Pyrene	mg/kg	0.1	Org-022/025	<0.1	1	0.2	0.2	0	111	#
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.1	0	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	1	0.1	0.1	0	122	#
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	1	0.2	0.2	0	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	1	0.1	0.2	67	114	#
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	1	<0.1	<0.1	0	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	104	1	106	105	1	106	90

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	3	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	3	01/03/2021	01/03/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	3	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	3	<0.1	0.2	67	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	3	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	3	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	3	0.3	0.3	0	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	3	<0.1	0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	3	0.6	0.9	40	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	3	0.9	1	11	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	3	0.5	0.7	33	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	3	0.4	0.6	40	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	3	0.8	1	22	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	3	0.52	0.72	32	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	3	0.1	0.5	133	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	3	0.1	0.2	67	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	3	0.4	0.5	22	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	3	107	103	4	[NT]	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	01/03/2021	01/03/2021		[NT]	[NT]
Naphthalene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthylene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Phenanthrene	mg/kg	0.1	Org-022/025	[NT]	21	0.1	0.2	67	[NT]	[NT]
Anthracene	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	[NT]	21	0.5	0.7	33	[NT]	[NT]
Pyrene	mg/kg	0.1	Org-022/025	[NT]	21	0.6	0.8	29	[NT]	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	[NT]	21	0.5	0.7	33	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	[NT]	21	0.4	0.5	22	[NT]	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	[NT]	21	0.8	1	22	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	[NT]	21	0.5	0.61	20	[NT]	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	[NT]	21	0.3	0.4	29	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	[NT]	21	0.1	0.1	0	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	[NT]	21	0.3	0.4	29	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	[NT]	21	104	102	2	[NT]	[NT]

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	262787-5
Date extracted	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			01/03/2021	3	01/03/2021	01/03/2021		01/03/2021	01/03/2021
alpha-BHC	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	99	108
HCB	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	96	96
gamma-BHC	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	83	84
delta-BHC	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	108	108
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	107	101
gamma-Chlordane	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	109	110
Dieldrin	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	107	96
Endrin	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	91	112
Endosulfan II	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	101	106
Endrin Aldehyde	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	97	88
Methoxychlor	mg/kg	0.1	Org-022/025	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	104	3	107	103	4	109	97

QUALITY CONTROL: Organochlorine Pesticides in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	01/03/2021	01/03/2021		[NT]	[NT]
alpha-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
HCB	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
beta-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
gamma-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
delta-BHC	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aldrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Heptachlor Epoxide	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
gamma-Chlordane	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
alpha-chlordane	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan I	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDE	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Dieldrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan II	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDD	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endrin Aldehyde	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
pp-DDT	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Endosulfan Sulphate	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Methoxychlor	mg/kg	0.1	Org-022/025	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-022/025	[NT]	21	106	103	3	[NT]	[NT]

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	262787-5
Date extracted	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			01/03/2021	3	01/03/2021	01/03/2021		01/03/2021	01/03/2021
Aroclor 1016	mg/kg	0.1	Org-021	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	<0.1	3	<0.1	<0.1	0	90	70
Aroclor 1260	mg/kg	0.1	Org-021	<0.1	3	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	104	3	107	103	4	109	97

QUALITY CONTROL: PCBs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date extracted	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	01/03/2021	01/03/2021		[NT]	[NT]
Aroclor 1016	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1221	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1232	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1242	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1248	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1254	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Aroclor 1260	mg/kg	0.1	Org-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Surrogate TCMX	%		Org-021	[NT]	21	106	103	3	[NT]	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-5	262787-5
Date prepared	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Arsenic	mg/kg	4	Metals-020	<4	3	<4	<4	0	80	93
Cadmium	mg/kg	0.4	Metals-020	<0.4	3	<0.4	<0.4	0	76	89
Chromium	mg/kg	1	Metals-020	<1	3	8	9	12	78	#
Copper	mg/kg	1	Metals-020	<1	3	11	12	9	84	112
Lead	mg/kg	1	Metals-020	<1	3	25	36	36	77	96
Mercury	mg/kg	0.1	Metals-021	<0.1	3	<0.1	<0.1	0	95	118
Nickel	mg/kg	1	Metals-020	<1	3	8	9	12	80	72
Zinc	mg/kg	1	Metals-020	<1	3	27	33	20	73	89

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Arsenic	mg/kg	4	Metals-020	[NT]	21	<4	6	40	[NT]	[NT]
Cadmium	mg/kg	0.4	Metals-020	[NT]	21	<0.4	<0.4	0	[NT]	[NT]
Chromium	mg/kg	1	Metals-020	[NT]	21	13	19	38	[NT]	[NT]
Copper	mg/kg	1	Metals-020	[NT]	21	5	5	0	[NT]	[NT]
Lead	mg/kg	1	Metals-020	[NT]	21	13	13	0	[NT]	[NT]
Mercury	mg/kg	0.1	Metals-021	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Nickel	mg/kg	1	Metals-020	[NT]	21	3	3	0	[NT]	[NT]
Zinc	mg/kg	1	Metals-020	[NT]	21	8	9	12	[NT]	[NT]

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	262787-5
Date prepared	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Total Cyanide	mg/kg	0.5	Inorg-014	<0.5	3	0.6	0.6	0	108	90

QUALITY CONTROL: Misc Soil - Inorg						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Total Cyanide	mg/kg	0.5	Inorg-014	[NT]	21	<0.5	<0.5	0	[NT]	[NT]

QUALITY CONTROL: PFAS in Soils Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	262787-5
Date prepared	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Date analysed	-			26/02/2021	3	26/02/2021	26/02/2021		26/02/2021	26/02/2021
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	109	112
Perfluoropentanesulfonic acid	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	102	100
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	102	98
Perfluoroheptanesulfonic acid	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	104	104
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	<0.1	3	0.4	0.4	0	100	104
Perfluorodecanesulfonic acid	µg/kg	0.2	Org-029	<0.2	3	<0.2	<0.2	0	99	76
Perfluorobutanoic acid	µg/kg	0.2	Org-029	<0.2	3	<0.2	<0.2	0	98	101
Perfluoropentanoic acid	µg/kg	0.2	Org-029	<0.2	3	<0.2	<0.2	0	112	115
Perfluorohexanoic acid	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	89	89
Perfluoroheptanoic acid	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	110	117
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	<0.1	3	<0.1	0.1	0	98	101
Perfluorononanoic acid	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	94	87
Perfluorodecanoic acid	µg/kg	0.5	Org-029	<0.5	3	<0.5	<0.5	0	93	102
Perfluoroundecanoic acid	µg/kg	0.5	Org-029	<0.5	3	<0.5	<0.5	0	96	87
Perfluorododecanoic acid	µg/kg	0.5	Org-029	<0.5	3	<0.5	<0.5	0	109	104
Perfluorotridecanoic acid	µg/kg	0.5	Org-029	<0.5	3	<0.5	<0.5	0	115	98
Perfluorotetradecanoic acid	µg/kg	5	Org-029	<5	3	<5	<5	0	103	113
4:2 FTS	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	111	109
6:2 FTS	µg/kg	0.1	Org-029	<0.1	3	<0.1	<0.1	0	100	104
8:2 FTS	µg/kg	0.2	Org-029	<0.2	3	<0.2	<0.2	0	94	99
10:2 FTS	µg/kg	0.2	Org-029	<0.2	3	<0.2	<0.2	0	116	##
Perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	3	<1	<1	0	106	106
N-Methyl perfluorooctane sulfonamide	µg/kg	1	Org-029	<1	3	<1	<1	0	99	106
N-Ethyl perfluorooctanesulfon amide	µg/kg	1	Org-029	<1	3	<1	<1	0	103	109
N-Me perfluorooctanesulfonamid oethanol	µg/kg	1	Org-029	<1	3	<1	<1	0	111	100
N-Et perfluorooctanesulfonamid oethanol	µg/kg	5	Org-029	<5	3	<5	<5	0	113	128
MePerfluorooctanesulf- amid oacetic acid	µg/kg	0.2	Org-029	<0.2	3	<0.2	<0.2	0	104	112
EtPerfluorooctanesulf amid oacetic acid	µg/kg	0.2	Org-029	<0.2	3	<0.2	<0.2	0	103	110
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	99	3	105	108	3	99	100
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	103	3	99	98	1	103	103

QUALITY CONTROL: PFAS in Soils Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	262787-5
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	107	3	98	103	5	102	94
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	114	3	114	107	6	111	111
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	117	3	111	107	4	116	118
Extracted ISTD $^{13}C_4$ *PFBA*	%		Org-029	118	3	111	109	2	116	113
Extracted ISTD $^{13}C_3$ *PFPeA*	%		Org-029	104	3	106	99	7	102	100
Extracted ISTD $^{13}C_2$ *PFHxA*	%		Org-029	119	3	116	112	4	119	122
Extracted ISTD $^{13}C_4$ *PFHpA*	%		Org-029	113	3	106	106	0	108	112
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	114	3	118	114	3	110	126
Extracted ISTD $^{13}C_5$ *PFNA*	%		Org-029	112	3	117	111	5	107	124
Extracted ISTD $^{13}C_2$ *PFDA*	%		Org-029	108	3	127	114	11	109	125
Extracted ISTD $^{13}C_2$ *PFUnDA*	%		Org-029	109	3	143	128	11	112	147
Extracted ISTD $^{13}C_2$ *PFDoDA*	%		Org-029	114	3	160	150	6	108	153
Extracted ISTD $^{13}C_2$ *PFTeDA*	%		Org-029	111	3	98	99	1	105	83
Extracted ISTD $^{13}C_2$ *4:2FTS*	%		Org-029	113	3	111	110	1	104	131
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	110	3	123	116	6	113	177
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	86	3	141	109	26	88	#
Extracted ISTD $^{13}C_8$ *FOSA*	%		Org-029	104	3	100	98	2	100	109
Extracted ISTD d_3 *N MeFOSA*	%		Org-029	108	3	108	106	2	112	102
Extracted ISTD d_5 *N EtFOSA*	%		Org-029	114	3	117	116	1	113	106
Extracted ISTD d_7 *N MeFOSE*	%		Org-029	108	3	114	111	3	107	97

QUALITY CONTROL: PFAS in Soils Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-1	262787-5
Extracted ISTD d_9 *N EtFOSE*	%		Org-029	114	3	110	114	4	108	80
Extracted ISTD d_3 *N MeFOSAA*	%		Org-029	101	3	146	116	23	105	#
Extracted ISTD d_5 *N EtFOSAA*	%		Org-029	103	3	164	119	32	104	#

QUALITY CONTROL: PFAS in Soils Extended					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Date prepared	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Date analysed	-			[NT]	21	26/02/2021	26/02/2021		[NT]	[NT]
Perfluorobutanesulfonic acid	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Perfluoropentanesulfonic acid	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Perfluorohexanesulfonic acid - PFHxS	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Perfluoroheptanesulfonic acid	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Perfluorooctanesulfonic acid PFOS	µg/kg	0.1	Org-029	[NT]	21	0.1	0.2	67	[NT]	[NT]
Perfluorodecanesulfonic acid	µg/kg	0.2	Org-029	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Perfluorobutanoic acid	µg/kg	0.2	Org-029	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Perfluoropentanoic acid	µg/kg	0.2	Org-029	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Perfluorohexanoic acid	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Perfluoroheptanoic acid	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Perfluorooctanoic acid PFOA	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Perfluorononanoic acid	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
Perfluorodecanoic acid	µg/kg	0.5	Org-029	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Perfluoroundecanoic acid	µg/kg	0.5	Org-029	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Perfluorododecanoic acid	µg/kg	0.5	Org-029	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Perfluorotridecanoic acid	µg/kg	0.5	Org-029	[NT]	21	<0.5	<0.5	0	[NT]	[NT]
Perfluorotetradecanoic acid	µg/kg	5	Org-029	[NT]	21	<5	<5	0	[NT]	[NT]
4:2 FTS	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
6:2 FTS	µg/kg	0.1	Org-029	[NT]	21	<0.1	<0.1	0	[NT]	[NT]
8:2 FTS	µg/kg	0.2	Org-029	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
10:2 FTS	µg/kg	0.2	Org-029	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Perfluorooctane sulfonamide	µg/kg	1	Org-029	[NT]	21	<1	<1	0	[NT]	[NT]
N-Methyl perfluorooctane sulfonamide	µg/kg	1	Org-029	[NT]	21	<1	<1	0	[NT]	[NT]
N-Ethyl perfluorooctanesulfon amide	µg/kg	1	Org-029	[NT]	21	<1	<1	0	[NT]	[NT]
N-Me perfluorooctanesulfonamid oethanol	µg/kg	1	Org-029	[NT]	21	<1	<1	0	[NT]	[NT]
N-Et perfluorooctanesulfonamid oethanol	µg/kg	5	Org-029	[NT]	21	<5	<5	0	[NT]	[NT]
MePerfluorooctanesulf- amid oacetic acid	µg/kg	0.2	Org-029	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
EtPerfluorooctanesulf amid oacetic acid	µg/kg	0.2	Org-029	[NT]	21	<0.2	<0.2	0	[NT]	[NT]
Surrogate $^{13}C_8$ *PFOS*	%		Org-029	[NT]	21	106	104	2	[NT]	[NT]
Surrogate $^{13}C_2$ *PFOA*	%		Org-029	[NT]	21	96	98	2	[NT]	[NT]

QUALITY CONTROL: PFAS in Soils Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Extracted ISTD $^{13}C_3$ *PFBS*	%		Org-029	[NT]	21	91	90	1	[NT]	[NT]
Extracted ISTD $^{18}O_2$ *PFHxS*	%		Org-029	[NT]	21	109	107	2	[NT]	[NT]
Extracted ISTD $^{13}C_4$ *PFOS*	%		Org-029	[NT]	21	105	109	4	[NT]	[NT]
Extracted ISTD $^{13}C_4$ *PFBA*	%		Org-029	[NT]	21	102	102	0	[NT]	[NT]
Extracted ISTD $^{13}C_3$ *PFPeA*	%		Org-029	[NT]	21	91	91	0	[NT]	[NT]
Extracted ISTD $^{13}C_2$ *PFHxA*	%		Org-029	[NT]	21	110	111	1	[NT]	[NT]
Extracted ISTD $^{13}C_4$ *PFHpA*	%		Org-029	[NT]	21	102	100	2	[NT]	[NT]
Extracted ISTD $^{13}C_4$ *PFOA*	%		Org-029	[NT]	21	109	103	6	[NT]	[NT]
Extracted ISTD $^{13}C_5$ *PFNA*	%		Org-029	[NT]	21	110	113	3	[NT]	[NT]
Extracted ISTD $^{13}C_2$ *PFDA*	%		Org-029	[NT]	21	112	111	1	[NT]	[NT]
Extracted ISTD $^{13}C_2$ *PFUnDA*	%		Org-029	[NT]	21	125	125	0	[NT]	[NT]
Extracted ISTD $^{13}C_2$ *PFDoDA*	%		Org-029	[NT]	21	140	142	1	[NT]	[NT]
Extracted ISTD $^{13}C_2$ *PFTeDA*	%		Org-029	[NT]	21	94	94	0	[NT]	[NT]
Extracted ISTD $^{13}C_2$ *4:2FTS*	%		Org-029	[NT]	21	103	106	3	[NT]	[NT]
Extracted ISTD $^{13}C_2$ *6:2FTS*	%		Org-029	[NT]	21	122	124	2	[NT]	[NT]
Extracted ISTD $^{13}C_2$ *8:2FTS*	%		Org-029	[NT]	21	117	121	3	[NT]	[NT]
Extracted ISTD $^{13}C_8$ *FOSA*	%		Org-029	[NT]	21	98	96	2	[NT]	[NT]
Extracted ISTD d_3 *N MeFOSA*	%		Org-029	[NT]	21	100	101	1	[NT]	[NT]
Extracted ISTD d_5 *N EtFOSA*	%		Org-029	[NT]	21	109	108	1	[NT]	[NT]
Extracted ISTD d_7 *N MeFOSE*	%		Org-029	[NT]	21	105	110	5	[NT]	[NT]

QUALITY CONTROL: PFAS in Soils Extended						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	[NT]	[NT]
Extracted ISTD d_9 *N EtFOSE*	%		Org-029	[NT]	21	108	106	2	[NT]	[NT]
Extracted ISTD d_3 *N MeFOSAA*	%		Org-029	[NT]	21	113	107	5	[NT]	[NT]
Extracted ISTD d_5 *N EtFOSAA*	%		Org-029	[NT]	21	116	111	4	[NT]	[NT]

Result Definitions

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

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

The recommended maximums for analytes in urine are taken from “2018 TLVs and BEIs”, as published by ACGIH (where available). Limit provided for Nickel is a precautionary guideline as per Position Paper prepared by AIOH Exposure Standards Committee, 2016.

Guideline limits for Rinse Water Quality reported as per analytical requirements and specifications of AS 4187, Amdt 2 2019, Table 7.2

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: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-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.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Report Comments

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures.
We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples were sub-sampled from jars provided by the client.

For PFAS Extracted Internal Standards denoted with # or outside the 50-150% acceptance range, the respective target analyte results may be unaffected, in other circumstances the PQL has been raised to accommodate the outlier(s).

PFAS in Soil:
Matrix spike recovery for 10:2FTS (178%) is outside global acceptance criteria (60-140%). However an acceptable recovery has been obtained for the LCS.

PAHs in Soil - # Percent recovery for the matrix spike is not possible to report as the high concentration of analytes in sample 262787-5ms have caused interference.

8 metals in soil - # Percent recovery is not possible to report due to the inhomogeneous nature of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

SAMPLE RECEIPT ADVICE

Client Details

Client	Jacobs Group (Australia) Pty Ltd
Attention	Amanda Mullen

Sample Login Details

Your reference	IA216715
Envirolab Reference	262787
Date Sample Received	25/02/2021
Date Instructions Received	25/02/2021
Date Results Expected to be Reported	04/03/2021

Sample Condition

Samples received in appropriate condition for analysis	Yes
No. of Samples Provided	22 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	12.6
Cooling Method	Ice Pack
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	**Phone: 02 9910 6200**
Fax: 02 9910 6201	**Fax: 02 9910 6201**
Email: ahie@envirolab.com.au	**Email: jhurst@envirolab.com.au**

Analysis Underway, details on the following page:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Organochlorine Pesticides in soil	PCBsin Soil	Acid Extractable metalsin soil	Misc Soil - Inorg	Asbestos ID - soils	PFAS in Soils Extended	On Hold
QAQC1	✓	✓	✓	✓	✓	✓	✓	✓	✓		
BH01_A											✓
BH01_B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH01_C											✓
BH01_D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH01_E											✓
BH02_A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH02_B											✓
BH02_C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH02_D											✓
BH03_A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH03_B											✓
BH03_C											✓
BH03_D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH05_A											✓
BH05_B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH05_C											✓
BH05_D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH04_A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH04_B											✓
BH04_C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
BH04_D											✓

The '✓' indicates the testing you have requested. **THIS IS NOT A REPORT OF THE RESULTS.**

Additional Info

Sample storage - Waters are routinely disposed of approximately 1 month and soils approximately 2 months from receipt.
Requests for longer term sample storage must be received in writing.
Please contact the laboratory immediately if observed settled sediment present in water samples is to be included in the extraction and/or analysis (exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, Total Recoverable metals and PFAS analysis where solids are included by default.
TAT for Micro is dependent on incubation. This varies from 3 to 6 days.

CHAIN OF CUSTODY FORM - Client

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ENVIROLAB GROUP
National phone number 1300 424 344

Sydney Lab - Envirolab Services
12 Ashley St, Chatswood, NSW 2067
02 9910 6200 | sydney@envirolab.com.au

Perth Lab - MPL Laboratories
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08 9317 2505 | lab@mpl.com.au

Melbourne Lab - Envirolab Services
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03 9763 2500 | melbourne@envirolab.com.au

Adelaide Office - Envirolab Services
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Brisbane Office - Envirolab Services
20a, 10-20 Depot St, Banyo, QLD 4014
07 3266 9532 | brisbane@envirolab.com.au

Darwin Office - Envirolab Services
Unit 20/119 Reichardt Road, Winnellie, NT 0820
08 8967 1201 | darwin@envirolab.com.au

Client: [redacted] JACOBS	Client Project Name/Number/Site etc (ie report title): IA216715
Contact Person: A. MULLEN / M. STACEY	PO No.: —
Project Mgr: RACHEL WAUGH	Envirolab Quote No. : —
Sampler: A. MULLEN	Date results required:
Address:	Or choose: standard / same day / 1 day / 2 day / 3 day *Note: Inform lab in advance if urgent turnaround is required - surcharges apply*
Phone: Mob: 0418 412 330	Additional report format: esdat / equis /
Email: amanda.mullen@jacobs.com	Lab Comments:

Sample information					Tests Required														Comments
Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	Heavy Metals (8)	PAH	Asbestos (ID)	TRH	BTEX	OCP	PCB	cyanide	VOC	PFAS suite [redacted]	ON HOLD					Provide as much information about the sample as you can
1	QAQC 1		24/2/21	SOIL	X	X	X	X	X	X	X	X	X	[redacted]						
MGT	QAQC 2		↓	↓	X	X	X	X	X	X	X	X	X	[redacted]						Pls send
2	BH01_A														X					QAQC 2
3	BH01_B				X	X	X	X	X	X	X	X	X	X						to Eurofins
4	BH01_C														X					
5	BH01_D				X	X	X	X	X	X	X	X	X	X						
6	BH01_E														X					
7	BH02_A				X	X	X	X	X	X	X	X	X	X						
8	BH02_B														X					
9	BH02_C				X	X	X	X	X	X	X	X	X	X						
10	BH02_D														X					
11	BH03_A		↓	↓	X	X	X	X	X	X	X	X	X	X						

☐ *Please tick the box if observed settled sediment present in water samples is to be included in the extraction and/or analysis*

Relinquished by (Company): JACOBS	Received by (Company): EL Syd	*Lab Use Only*	
Print Name: A. MULLEN	Print Name: R. Khazen	Job number: 262787	Cooling: Ice / Ice pack / None
Date & Time: 25/2/21 9.00	Date & Time: 25/2/21 9.20	Temperature: 12.6	Security seal: Intact / Broken / None
Signature:	Signature:	TAT Req - SAME day / 1 / 2 / 3 / 4 STD	

CHAIN OF CUSTODY FORM - Client

[Copyright and Confidential]

ENVIROLAB GROUP
National phone number 1300 424 344

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Darwin Office - Envirolab Services
Unit 20/119 Reichardt Road, Winnellie, NT 0820
08 8967 1201 | darwin@envirolab.com.au

Client: JACOBS	Client Project Name/Number/Site etc (ie report title): 192/6715
Contact Person: A. MULLEN / M. STACEY	
Project Mgr: R. WAUGH	PO No.: —
Sampler: A. MULLEN	Envirolab Quote No. : —
Address:	Date results required:
	Or choose: standard / same day / 1 day / 2 day / 3 day
	Note: Inform lab in advance if urgent turnaround is required - surcharges apply
Phone: Mob: 0418 412 330	Additional report format: esdat / equis /
Email: amanda.mullen@jacobs.com	Lab Comments:

Sample information					Tests Required														Comments
Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	Heavy metals (8)	PAH	asbestos (qual)	TRH	BTEX	OCP	PCB	cyanide	VOC	PFAS suite ext.	ON HOLD					Provide as much information about the sample as you can
12	BH03 - B		24/2/21	SOIL											X					
13	BH03 - C														X					
14	BH03 - D				X	X	X	X	X	X	X	X	X	X						
15	BH05 - A														X					
16	BH05 - B				X	X	X	X	X	X	X	X	X	X						
17	BH05 - C														X					
18	BH05 - D				X	X	X	X	X	X	X	X	X	X						
19	BH04 - A				X	X	X	X	X	X	X	X	X	X						
20	BH04 - B														X					
21	BH04 - C				X	X	X	X	X	X	X	X	X	X						
22	BH04 - D		↓	↓											X					

☐ *Please tick the box if observed settled sediment present in water samples is to be included in the extraction and/or analysis*

Relinquished by (Company): JACOBS	Received by (Company):	*Lab Use Only*	
Print Name: A. MULLEN	Print Name:	Job number: 462787	Cooling: Ice / Ice pack / None
Date & Time: 25/2/21 9.00	Date & Time: 25/2/21 9.20	Temperature: 12-6	Security seal: Intact / Broken / None
Signature:	Signature:	TAT Req - SAME day / 1 / 2 / 3 / 4 / STD	

2/2

Jacobs Group (Australia) P/L NSW
Level 7, 177 Pacific Highway
North Sydney
NSW 2065

Attention: **Amanda Mullen**

Report **776559-S**
Project name
Project ID IA216715
Received Date Feb 25, 2021

Client Sample ID			**QAQC2**
Sample Matrix			**Soil**
Eurofins Sample No.			**S21-Fe51374**
Date Sampled			**Feb 24, 2021**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	118
Volatile Organics			
1.1-Dichloroethane	0.5	mg/kg	< 0.5
1.1-Dichloroethene	0.5	mg/kg	< 0.5
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5
1.1.1.2-Tetrachloroethane	0.5	mg/kg	< 0.5
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5
1.1.2.2-Tetrachloroethane	0.5	mg/kg	< 0.5
1.2-Dibromoethane	0.5	mg/kg	< 0.5
1.2-Dichlorobenzene	0.5	mg/kg	< 0.5
1.2-Dichloroethane	0.5	mg/kg	< 0.5
1.2-Dichloropropane	0.5	mg/kg	< 0.5
1.2.3-Trichloropropane	0.5	mg/kg	< 0.5
1.2.4-Trimethylbenzene	0.5	mg/kg	< 0.5
1.3-Dichlorobenzene	0.5	mg/kg	< 0.5
1.3-Dichloropropane	0.5	mg/kg	< 0.5
1.3.5-Trimethylbenzene	0.5	mg/kg	< 0.5
1.4-Dichlorobenzene	0.5	mg/kg	< 0.5
2-Butanone (MEK)	0.5	mg/kg	< 0.5
2-Propanone (Acetone)	0.5	mg/kg	< 0.5
4-Chlorotoluene	0.5	mg/kg	< 0.5
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5
Allyl chloride	0.5	mg/kg	< 0.5

Client Sample ID			QAQC2
Sample Matrix			**Soil**
Eurofins Sample No.			**S21-Fe51374**
Date Sampled			**Feb 24, 2021**
Test/Reference	LOR	Unit	
Volatile Organics			
Benzene	0.1	mg/kg	< 0.1
Bromobenzene	0.5	mg/kg	< 0.5
Bromochloromethane	0.5	mg/kg	< 0.5
Bromodichloromethane	0.5	mg/kg	< 0.5
Bromoform	0.5	mg/kg	< 0.5
Bromomethane	0.5	mg/kg	< 0.5
Carbon disulfide	0.5	mg/kg	< 0.5
Carbon Tetrachloride	0.5	mg/kg	< 0.5
Chlorobenzene	0.5	mg/kg	< 0.5
Chloroethane	0.5	mg/kg	< 0.5
Chloroform	0.5	mg/kg	< 0.5
Chloromethane	0.5	mg/kg	< 0.5
cis-1.2-Dichloroethene	0.5	mg/kg	< 0.5
cis-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Dibromochloromethane	0.5	mg/kg	< 0.5
Dibromomethane	0.5	mg/kg	< 0.5
Dichlorodifluoromethane	0.5	mg/kg	< 0.5
Ethylbenzene	0.1	mg/kg	< 0.1
Iodomethane	0.5	mg/kg	< 0.5
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5
m&p-Xylenes	0.2	mg/kg	< 0.2
Methylene Chloride	0.5	mg/kg	< 0.5
o-Xylene	0.1	mg/kg	< 0.1
Styrene	0.5	mg/kg	< 0.5
Tetrachloroethene	0.5	mg/kg	< 0.5
Toluene	0.1	mg/kg	< 0.1
trans-1.2-Dichloroethene	0.5	mg/kg	< 0.5
trans-1.3-Dichloropropene	0.5	mg/kg	< 0.5
Trichloroethene	0.5	mg/kg	< 0.5
Trichlorofluoromethane	0.5	mg/kg	< 0.5
Vinyl chloride	0.5	mg/kg	< 0.5
Xylenes - Total*	0.3	mg/kg	< 0.3
Total MAH*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 CHC (Total)*	0.5	mg/kg	< 0.5
Vic EPA IWRG 621 Other CHC (Total)*	0.5	mg/kg	< 0.5
4-Bromofluorobenzene (surr.)	1	%	118
Toluene-d8 (surr.)	1	%	124
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100

Client Sample ID			QAQC2
Sample Matrix			Soil
Eurofins Sample No.			S21-Fe51374
Date Sampled			Feb 24, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	0.7
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	1.0
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.3
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	0.6
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	0.6
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5
Pyrene	0.5	mg/kg	0.6
Total PAH*	0.5	mg/kg	2.3
2-Fluorobiphenyl (surr.)	1	%	90
p-Terphenyl-d14 (surr.)	1	%	112
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	0.1	mg/kg	< 0.1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.2
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.2
Dibutylchlorendate (surr.)	1	%	110
Tetrachloro-m-xylene (surr.)	1	%	103

Client Sample ID			QAQC2
Sample Matrix			**Soil**
Eurofins Sample No.			**S21-Fe51374**
Date Sampled			**Feb 24, 2021**
Test/Reference	LOR	Unit	
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	%	110
Tetrachloro-m-xylene (surr.)	1	%	103
Cyanide (total)	1	mg/kg	< 1
% Moisture	1	%	13
Heavy Metals			
Arsenic	2	mg/kg	4.4
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	24
Copper	5	mg/kg	13
Lead	5	mg/kg	50
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	14
Zinc	5	mg/kg	45

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Mar 02, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Mar 02, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 02, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 02, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Mar 02, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Mar 02, 2021	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Volatile Organics	Sydney	Mar 02, 2021	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Cyanide (total)	Sydney	Mar 02, 2021	14 Days
- Method: E054 Total Cyanide			
Organochlorine Pesticides	Sydney	Mar 02, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Polychlorinated Biphenyls	Sydney	Mar 02, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	Feb 25, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

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IANZ # 1290

Company Name: Jacobs Group (Australia) P/L NSW
Address: Level 7, 177 Pacific Highway
North Sydney
NSW 2065

Project Name:
Project ID: IA216715

Order No.:
Report #: 776559
Phone: 02 9928 2100
Fax: 02 9928 2504

Received: Feb 25, 2021 3:30 PM
Due: Mar 4, 2021
Priority: 5 Day
Contact Name: Amanda Mullen

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - AS4964	Cyanide (total)	Suite B13: OCP/PCB	Volatile Organics	Moisture Set	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
Mayfield Laboratory											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	QAQC2	Feb 24, 2021		Soil	S21-Fe51374	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

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

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.3
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

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

Results <10 times the LOR : No Limit

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

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

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

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.3 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

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

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							
Volatile Organics							
1.1-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dibromoethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloroethane	mg/kg	< 0.5			0.5	Pass	
1.2-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.3-Trichloropropane	mg/kg	< 0.5			0.5	Pass	
1.2.4-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
1.3-Dichloropropane	mg/kg	< 0.5			0.5	Pass	
1.3.5-Trimethylbenzene	mg/kg	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Chlorotoluene	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Allyl chloride	mg/kg	< 0.5			0.5	Pass	
Bromobenzene	mg/kg	< 0.5			0.5	Pass	
Bromochloromethane	mg/kg	< 0.5			0.5	Pass	
Bromodichloromethane	mg/kg	< 0.5			0.5	Pass	
Bromoform	mg/kg	< 0.5			0.5	Pass	
Bromomethane	mg/kg	< 0.5			0.5	Pass	
Carbon disulfide	mg/kg	< 0.5			0.5	Pass	
Carbon Tetrachloride	mg/kg	< 0.5			0.5	Pass	
Chlorobenzene	mg/kg	< 0.5			0.5	Pass	
Chloroethane	mg/kg	< 0.5			0.5	Pass	
Chloroform	mg/kg	< 0.5			0.5	Pass	
Chloromethane	mg/kg	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
cis-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Dibromochloromethane	mg/kg	< 0.5			0.5	Pass	
Dibromomethane	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	mg/kg	< 0.5			0.5	Pass	
Iodomethane	mg/kg	< 0.5			0.5	Pass	
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
Methylene Chloride	mg/kg	< 0.5			0.5	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Tetrachloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.2-Dichloroethene	mg/kg	< 0.5			0.5	Pass	
trans-1.3-Dichloropropene	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	Pass	
Trichlorofluoromethane	mg/kg	< 0.5			0.5	Pass	
Vinyl chloride	mg/kg	< 0.5			0.5	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	
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							
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	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	< 0.1			0.1	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							
Cyanide (total)	mg/kg	< 1			1	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	%	100			70-130	Pass	
TRH C10-C14	%	76			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	117			70-130	Pass	
Toluene	%	110			70-130	Pass	
Ethylbenzene	%	122			70-130	Pass	
m&p-Xylenes	%	120			70-130	Pass	
o-Xylene	%	121			70-130	Pass	
Xylenes - Total*	%	120			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	122			70-130	Pass	
1.1.1-Trichloroethane	%	110			70-130	Pass	
1.2-Dichlorobenzene	%	108			70-130	Pass	
1.2-Dichloroethane	%	111			70-130	Pass	
Trichloroethene	%	113			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	96			70-130	Pass	
TRH C6-C10	%	98			70-130	Pass	
TRH >C10-C16	%	76			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	99			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	%	96			70-130	Pass	
Anthracene	%	106			70-130	Pass	
Benz(a)anthracene	%	105			70-130	Pass	
Benzo(a)pyrene	%	111			70-130	Pass	
Benzo(b&j)fluoranthene	%	97			70-130	Pass	
Benzo(g.h.i)perylene	%	119			70-130	Pass	
Benzo(k)fluoranthene	%	107			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a.h)anthracene	%	109			70-130	Pass	
Fluoranthene	%	104			70-130	Pass	
Fluorene	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	111			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
Phenanthrene	%	101			70-130	Pass	
Pyrene	%	107			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	119			70-130	Pass	
4.4'-DDD	%	93			70-130	Pass	
4.4'-DDE	%	110			70-130	Pass	
4.4'-DDT	%	118			70-130	Pass	
a-BHC	%	110			70-130	Pass	
Aldrin	%	113			70-130	Pass	
b-BHC	%	112			70-130	Pass	
d-BHC	%	109			70-130	Pass	
Dieldrin	%	104			70-130	Pass	
Endosulfan I	%	108			70-130	Pass	
Endosulfan II	%	96			70-130	Pass	
Endosulfan sulphate	%	102			70-130	Pass	
Endrin	%	110			70-130	Pass	
Endrin aldehyde	%	113			70-130	Pass	
Endrin ketone	%	97			70-130	Pass	
g-BHC (Lindane)	%	114			70-130	Pass	
Heptachlor	%	125			70-130	Pass	
Heptachlor epoxide	%	107			70-130	Pass	
Hexachlorobenzene	%	107			70-130	Pass	
Methoxychlor	%	116			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	125			70-130	Pass	
Aroclor-1260	%	124			70-130	Pass	
LCS - % Recovery							
Cyanide (total)	%	107			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	94			80-120	Pass	
Cadmium	%	95			80-120	Pass	
Chromium	%	96			80-120	Pass	
Copper	%	95			80-120	Pass	
Lead	%	97			80-120	Pass	
Mercury	%	96			80-120	Pass	
Nickel	%	96			80-120	Pass	
Zinc	%	94			80-120	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	S21-Fe46322	NCP	%	74			70-130	Pass	
TRH C10-C14	S21-Ma06214	NCP	%	77			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-Fe51875	NCP	%	92			70-130	Pass	
Toluene	S21-Fe51875	NCP	%	95			70-130	Pass	
Ethylbenzene	S21-Fe51875	NCP	%	96			70-130	Pass	
m&p-Xylenes	S21-Fe51875	NCP	%	97			70-130	Pass	
o-Xylene	S21-Fe51875	NCP	%	100			70-130	Pass	
Xylenes - Total*	S21-Fe51875	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethene	S21-Fe45430	NCP	%	89			70-130	Pass	
1.1.1-Trichloroethane	S21-Fe45430	NCP	%	93			70-130	Pass	
1.2-Dichlorobenzene	S21-Fe45430	NCP	%	97			70-130	Pass	
1.2-Dichloroethane	S21-Fe45430	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S21-Fe51875	NCP	%	89			70-130	Pass	
TRH C6-C10	S21-Fe46322	NCP	%	75			70-130	Pass	
TRH >C10-C16	S21-Ma06214	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-Ma08990	NCP	%	76			70-130	Pass	
Acenaphthylene	S21-Ma08990	NCP	%	80			70-130	Pass	
Anthracene	S21-Ma08990	NCP	%	84			70-130	Pass	
Benz(a)anthracene	S21-Ma08990	NCP	%	83			70-130	Pass	
Benzo(a)pyrene	S21-Ma08990	NCP	%	83			70-130	Pass	
Benzo(b&j)fluoranthene	S21-Ma08990	NCP	%	85			70-130	Pass	
Benzo(g.h.i)perylene	S21-Ma08990	NCP	%	92			70-130	Pass	
Benzo(k)fluoranthene	S21-Ma08990	NCP	%	97			70-130	Pass	
Chrysene	S21-Ma08990	NCP	%	82			70-130	Pass	
Dibenz(a.h)anthracene	S21-Ma08990	NCP	%	93			70-130	Pass	
Fluoranthene	S21-Ma08990	NCP	%	88			70-130	Pass	
Fluorene	S21-Ma08990	NCP	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-Ma08990	NCP	%	94			70-130	Pass	
Naphthalene	S21-Ma08990	NCP	%	77			70-130	Pass	
Phenanthrene	S21-Ma08990	NCP	%	82			70-130	Pass	
Pyrene	S21-Ma08990	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-Ma08990	NCP	%	89			70-130	Pass	
4.4'-DDD	S21-Ma08990	NCP	%	88			70-130	Pass	
4.4'-DDE	S21-Ma08990	NCP	%	95			70-130	Pass	
4.4'-DDT	S21-Ma08990	NCP	%	109			70-130	Pass	
a-BHC	S21-Ma08990	NCP	%	94			70-130	Pass	
Aldrin	S21-Ma08990	NCP	%	91			70-130	Pass	
b-BHC	S21-Ma08990	NCP	%	88			70-130	Pass	
d-BHC	S21-Ma08990	NCP	%	91			70-130	Pass	
Dieldrin	S21-Ma08990	NCP	%	90			70-130	Pass	
Endosulfan I	S21-Ma08990	NCP	%	85			70-130	Pass	
Endosulfan II	S21-Ma08990	NCP	%	80			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	S21-Ma08990	NCP	%	86			70-130	Pass	
Endrin	S21-Ma08990	NCP	%	103			70-130	Pass	
Endrin aldehyde	S21-Ma08990	NCP	%	83			70-130	Pass	
Endrin ketone	S21-Ma08990	NCP	%	86			70-130	Pass	
g-BHC (Lindane)	S21-Ma08990	NCP	%	91			70-130	Pass	
Heptachlor	S21-Ma08990	NCP	%	116			70-130	Pass	
Heptachlor epoxide	S21-Ma08990	NCP	%	89			70-130	Pass	
Hexachlorobenzene	S21-Ma08990	NCP	%	91			70-130	Pass	
Methoxychlor	S21-Ma08990	NCP	%	103			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S21-Ma08990	NCP	%	101			70-130	Pass	
Aroclor-1260	S21-Ma08990	NCP	%	108			70-130	Pass	
Spike - % Recovery									
				Result 1					
Cyanide (total)	S21-Ma02949	NCP	%	83			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-Fe51372	NCP	%	96			75-125	Pass	
Cadmium	S21-Fe51372	NCP	%	98			75-125	Pass	
Chromium	S21-Fe51372	NCP	%	100			75-125	Pass	
Copper	S21-Fe51372	NCP	%	95			75-125	Pass	
Lead	S21-Fe51372	NCP	%	88			75-125	Pass	
Mercury	S21-Fe51372	NCP	%	97			75-125	Pass	
Nickel	S21-Fe51372	NCP	%	97			75-125	Pass	
Zinc	S21-Fe51372	NCP	%	78			75-125	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	S21-Fe51857	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S21-Ma06212	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-Ma06212	NCP	mg/kg	51	< 50	43	30%	Fail	Q15
TRH C29-C36	S21-Ma06212	NCP	mg/kg	64	54	17	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-Fe51857	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-Fe51857	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-Fe51857	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-Fe51857	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-Fe51857	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-Fe51857	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1-Dichloroethene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1-Trichloroethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dibromoethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichlorobenzene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloroethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2-Dichloropropane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.2.3-Trichloropropane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2.4-Trimethylbenzene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichlorobenzene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3-Dichloropropane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.3.5-Trimethylbenzene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.4-Dichlorobenzene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chlorotoluene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Allyl chloride	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromobenzene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromochloromethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromodichloromethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromoform	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Bromomethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon disulfide	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Carbon Tetrachloride	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chlorobenzene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloroform	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chloromethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.2-Dichloroethene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
cis-1.3-Dichloropropene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromochloromethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibromomethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorodifluoromethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Iodomethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropyl benzene (Cumene)	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Methylene Chloride	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Tetrachloroethene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.2-Dichloroethene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
trans-1.3-Dichloropropene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichloroethene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Trichlorofluoromethane	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Vinyl chloride	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S21-Fe51857	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-Fe51857	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S21-Ma06212	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-Ma06212	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-Ma06212	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Dibenz(a.h)anthracene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-Ma00750	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-Ma00750	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-Ma00750	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-Ma00750	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S21-Ma06212	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1221	S21-Ma06212	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S21-Ma06212	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1242	S21-Ma06212	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1248	S21-Ma06212	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1254	S21-Ma06212	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Aroclor-1260	S21-Ma06212	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Total PCB*	S21-Ma06212	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Cyanide (total)	S21-Fe51374	CP	mg/kg	< 1	< 1	<1	30%	Pass	
% Moisture	S21-Fe51372	NCP	%	13	13	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-Fe48315	NCP	mg/kg	30	26	13	30%	Pass	
Cadmium	S21-Fe48315	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-Fe48315	NCP	mg/kg	55	48	13	30%	Pass	
Copper	S21-Fe48315	NCP	mg/kg	28	33	15	30%	Pass	
Lead	S21-Fe48315	NCP	mg/kg	55	61	9.0	30%	Pass	
Mercury	S21-Fe48315	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-Fe48315	NCP	mg/kg	8.6	7.7	11	30%	Pass	
Zinc	S21-Fe48315	NCP	mg/kg	31	34	8.0	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 Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Andrew Black	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)

Glenn Jackson
General 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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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Jacobs Group (Australia) P/L NSW
Address: Level 7, 177 Pacific Highway
North Sydney
NSW 2065

Project Name:
Project ID: IA216715

Order No.:
Report #: 776559
Phone: 02 9928 2100
Fax: 02 9928 2504

Received: Feb 25, 2021 3:30 PM
Due: Mar 4, 2021
Priority: 5 Day
Contact Name: Amanda Mullen

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - AS4964	Cyanide (total)	Suite B13: OCP/PCB	Volatile Organics	Moisture Set	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
Mayfield Laboratory											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	QAQC2	Feb 24, 2021		Soil	S21-Fe51374	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1

Jacobs Group (Australia) P/L NSW
Level 7, 177 Pacific Highway
North Sydney
NSW 2065

Attention:	Amanda Mullen
Report	776559-AID
Project Name	
Project ID	IA216715
Received Date	Feb 25, 2021
Date Reported	Mar 05, 2021

Methodology:

Asbestos Fibre Identification	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. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter 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) is employed. *NOTE: 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 for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name
Project ID IA216715
Date Sampled Feb 24, 2021
Report 776559-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
QAQC2	21-Fe51374	Feb 24, 2021	Approximate Sample 69g Sample consisted of: Brown coarse-grained clayey-sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Feb 25, 2021	Indefinite

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NATA # 1261 Site # 18217

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Phone : 0800 856 450
IANZ # 1290

Company Name: Jacobs Group (Australia) P/L NSW
Address: Level 7, 177 Pacific Highway
North Sydney
NSW 2065

Project Name:
Project ID: IA216715

Order No.:
Report #: 776559
Phone: 02 9928 2100
Fax: 02 9928 2504

Received: Feb 25, 2021 3:30 PM
Due: Mar 4, 2021
Priority: 5 Day
Contact Name: Amanda Mullen

Eurofins Analytical Services Manager : Andrew Black

Sample Detail						Asbestos - AS4964	Cyanide (total)	Suite B13: OCP/PCB	Volatile Organics	Moisture Set	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271											
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794											
Perth Laboratory - NATA Site # 23736											
Mayfield Laboratory											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	QAQC2	Feb 24, 2021		Soil	S21-Fe51374	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1

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. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
5. 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	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to “non-bonded / friable”.
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

The sample received was not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-sample to be analysed accurately represented the sample received.

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Chamath JHM Annakkage	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General 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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IANZ # 1290

Sample Receipt Advice

Company name:	Jacobs Group (Australia) P/L NSW
Contact name:	Amanda Mullen
Project name:	Not provided
Project ID:	IA216715
Turnaround time:	5 Day
Date/Time received	Feb 25, 2021 3:30 PM
Eurofins reference	776559

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Andrew Black on phone : (+61) 2 9900 8490 or by email: AndrewBlack@eurofins.com

Results will be delivered electronically via email to Amanda Mullen - amanda.mullen@jacobs.com.

Global Leader - Results you can trust