Charter Hall

Preliminary Site Investigation

Compass 2 Warehouse & Distribution Centre

Lot 1 Eastern Creek Drive
Eastern Creek, NSW

7 February 2022

62144/143,614(Rev 2)

JBS&G

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Abbreviations

Term	Definition
ACM	Asbestos Containing Material
AHD	Australian Height Datum
ASS	Acid Sulfate Soil
ASRIS	Australian Soil Resource Information System
bgs	Below ground surface
BTEXN	Benzene, toluene, ethylbenzene, xylenes and naphthalene
CLM Act	Contaminated Land Management Act 1997
DP	Deposited Plan
EDD	Environmental Due Diligence
EIL	Environmental Investigation Level
ESL	Environmental Screening Level
EPA	Environment Protection Authority
HIL	Health Investigation Level
JBS&G	JBS&G Australia Pty Ltd
LGA	Local Government Area
PAHs	Polycyclic aromatic hydrocarbons
PFAS	Per- and Poly- Fluoroalkyl Substances
PSI	Preliminary Site Investigation
POEO Act	Protection of the Environment Operations Act 1997
SEARs	Secretary's Environmental Assessment Requirements
SEPP 55	State Environmental Planning Policy No 55
Tactical	Tactical Group
TRH	Total recoverable hydrocarbons
WSP	WSP Consultants

1. Introduction

JBS&G Australia Pty Ltd (JBS&G) was engaged by Charter Hall (the client) to develop a Preliminary Site Investigation (PSI) to address the Planning Secretary's Environmental Assessment Requirements (SEARs) for the proposed Compass 2 Warehouse & Distribution Centre in Eastern Creek, in particular Condition 16 - *Contamination and Remediation* (see **Appendix A**).

The site at Lot 1 of Deposited Plan (DP) 1274322 Eastern Creek Drive Eastern Creek, NSW, is approximately 4.8 hectares, and has been the subject of an Environmental Due Diligence (EDD) Assessment completed by WSP (2021[1]) for proposed commercial/industrial development. The WSP (2021) Environmental Due Diligence is provided in **Appendix B.**

It is understood that the site has undergone cut and fill earthworks to level before subdivision of the lot.

The site location and current site layout are shown in **Figure 2**and **Figure 3.**

1.1 Project Description

The project, referred to as Compass 2 Warehouse & Distributions Centre, will involve the construction and 24/7 operation of a warehouse and distribution centre at Lot 1 Eastern Creek Drive, Eastern Creek, comprising:

- minor earthworks involving cut and fill works;
- site preparation works and servicing;
- warehouse, main office, ancillary office, dock office, loading docks, carparking, forklift charging room; and
- external hardstands and landscaping.

As shown in **Figure 1** – the site and ground floor plan below.

[1] *Environmental Due Diligence Assessment – Phase I and Phase II – Eastern Creek Drive*, dated 03/09/2021, PSI122970-CLM-REP-Eastern Creek, Rev B, WSP (2021).

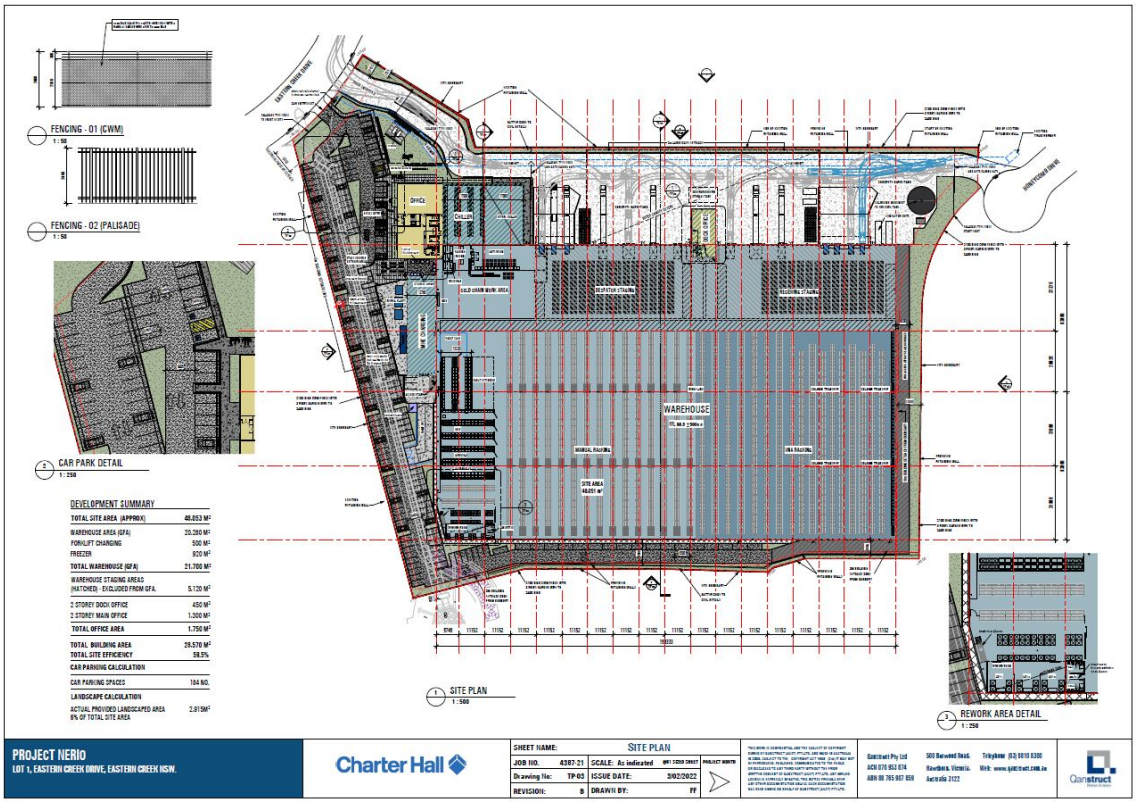


Figure 1: Site and ground floor plan.

1.2 Investigation Objectives

The objective of this report is to investigate the status of contamination for the site and to determine if any further works are required to satisfy the site SEARs conditions and the requirements of the State Environmental Planning Policy No 55 (SEPP 55) (Managing Land Contamination).

Table 1: SEARS Compliance Condition 16 *Contamination and Remediation.*

Key Issue No. & Description	Issue and Assessment Required	How it is Addressed	Section of this Report
Condition 16. Contamination and Remediation	Identify potential contaminant sources for the site and the surrounding environment.	A desktop search of EPA records to gather information about potential contaminant sources for the site and the surrounding environment was conducted. A site inspection was conducted to identify any potential contamination areas on the site. Review the Environmental Due Diligence Report completed by WSP	Section 2.2, Section 3 and Section 4.
	Demonstrate that investigations conducted into the status of contamination on the site satisfies the SEARS by satisfying SEP55 requirements.	A comparison of historical land use and zoning with the proposed land use zoning in combination with a review of the current contamination status of the site.	Section 5

1.3 Scope of Work

The following scope of works was undertaken:

- A review of the Environmental Due Diligence Assessment (WSP 2021) and it's characterisation of potential site contamination;
- Site inspection;
- A review of the topography, geology and hydrogeology of the site and surrounding areas; and
- A desktop review of available Environmental Protection Authority (EPA) registers and Per- and Poly- Fluoroalkyl Substances (PFAS) register for the site and surrounds.

2. Site Condition and Surrounding Environment

2.1 Site Identification

The site location is shown on **Figure 2**. The site details are summarised in **Table 2** and described in detail in the following sections.

Table 2: Summary Site Details

Lot/DP	Lot1 DP 1274322,, Eastern Creek Drive, Eastern Creek
Address	Lot 1 DP 1274322, Eastern Creek Drive, Eastern Creek, 2766
Site Area (ha)	4.8 Ha
Local Government Authority	Blacktown City Council
Approximate Site Co-ordinates (MGA 56)	E: 299822.144 N: 6257085.034
Site Zoning	WSEA – SEPP (Western Sydney Employment Area 2009)
Previous Land Use	Agricultural
Proposed Land Use	Commercial Industrial Land Use

2.2 Site Description

A site inspection was completed by JBS&G on the 4 November 2021 and a photo log is attached in **Appendix C**. A summary of site observations is outlined below.

The site was vacant with low grass cover, as shown in **Photograph 1** and **Photograph 8**. A raised area (approximate height 3m) is present along the east and north-eastern boundary with an approximate 50m width, shown in **Photograph 2**. A smaller, raised area exists on the boundary in the south-eastern corner of the site, adjacent to the entrance, shown in **Photograph 3.** An earth bund and swale run east-west parallel with the southern boundary, as shown in **Photograph 4.** Two stormwater drains exist in the swale. Two small stockpiles were observed atop the raised area in the north-western portion of the site. One stockpile consisted of gravel material, shown in **Photograph 5.** The second stockpile consisted of organic matter including tree branches and vegetation matter, as shown in **Photograph 6.**

2.3 Surrounding Land Use

The current land uses of adjacent properties or properties across adjacent roadways are summarised below:

- North – Honeycomb Drive, followed by industrial warehousing;
- East – A vacant undeveloped lot with two sediment ponds adjacent the site boundary;
- South – A warehouse is currently being constructed on the lot immediately south of the site; and
- West – Eastern Creek Drive to the south-west with industrial premises (Jaycar Electricals) to the immediate west.

2.4 Topography

The topography of the site and surrounds is generally level with an approximate elevation of 60m Australian height datum (AHD).

The site was observed to gently slope to the east, with a section of the site in the west, extending to the north west approximately 3m higher than the overall site, see **Photograph 2.**

The nearest water body was two sediment ponds located on the adjacent property to the east. The site also contained an earth bund creating a swale that fed into a stormwater drain, see **Photograph 4.**

2.5 Geology and Soils

A review of the 1:100 000 scale Penrith Geological Map (DME 1991[2]) identifies the site as underlain by the Cambrian aged Wianamatta Group Bringelly Shale consisting of shale, carbonaceous claystone, laminate, fine to medium grained sandstone and rare coal and tuff.

2.6 Hydrology

Most of the site is unsealed and therefore precipitation falling onto the site is expected to penetrate the ground surface. In the event of heavy rain surface water would follow the slope of the site and runoff to the east and be collected by the sediment basins on the adjacent property. Surface water in the south of site is expected to be directed by the swale into the stormwater drains.

The closest water body is Reedy Creek located approximately 900m to the south-east of the site.

2.7 Hydrogeology

A review of the NSW Department of Primary Industries - Office of Water Groundwater Monitoring overview map indicates no registered boreholes within 500m of the site.

2.8 Acid Sulfate Soils

A review of the Australian Soil Resource Information System (ASRIS) Acid Sulfate Soil (ASS) map indicates that the site has an extremely low probability of occurrence of acid sulfate soils (ASS) at the site.

2.9 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location (Prospect Reservoir[3]) indicates the site is located within the following meteorological setting:

- Average minimum temperatures vary from 6^{o}C in July to 18 ^{o}C in February;
- Average maximum temperatures vary from 17 ^{o}C in July to 30 ^{o}C in January;
- The average annual rainfall is approximately 876.8 mm with rainfall greater than 1 mm occurring on an average of 84 days per year; and
- Monthly rainfall varies from 46.2 mm in September to 100.6 mm in March with the wettest periods occurring on average in January to March.

[2] Penrith - *Geological Series Sheet 9030 (Edition 1) 1991*. Department of Minerals and Energy, Geological Survey of NSW (DME 1991)

[3] http://www.bom.gov.au/climate/averages/tables/cw_067084.shtml, Commonwealth of Australia, 2013 Bureau of Meteorology, Product IDCJCM0028 and accessed by JBS&G on 4 November 2021

3. Site History

3.1 Historical Aerial Photographs

A review of historical aerial photographs was completed by WSP (2021) in the Environmental Due Diligence report.

From observations during the site inspection by WSP and the review of historical information and photographs, it was concluded that the site has been vacant agricultural land since at least 1965 until 2009. It was then used for stockpile storage and a detention basin constructed. It has subsequently been used for further stockpile storage and to access adjacent properties. The source of these stockpiles was unknown. The site has been surrounded by industrial buildings since approximately 2009.

A site inspection and review of Nearmap imagery (2021) confirms the site is currently of a similar appearance to that encountered by WSP (2021), see the photo log in **Appendix C**.

3.2 EPA Records

A search of the NSW EPA Contaminated Sites database and Protection of the Environment Act, public register of licence, applications and notices conducted by WSP in November 2020 (WSP 2021), indicated that neither the site nor the surrounding properties were currently registered on the list of sites notified to NSW EPA, or regulated by the NSW EPA as a contaminated site, nor licensed under the Protection of Environment Operations Act (POEO).

An updated search undertaken on 4 November 2021 for the site and immediate surroundings (**Appendix D**) included the following:

- NSW EPA contaminated land public register of record of notices (under Section 58 of the Contaminated Land Management Act 1997 (CLM Act);
- NSW EPA Protection of the Environment Act public register of licence, applications and notices (maintained under Section 308 of POEO Act 1997; and
- NSW contaminated site notified to the EPA (under Section 60 of the CLM Act).

No notices have been issued under the CLM Act for the site and immediate surroundings.

The search of the EPA record of licenced activities under the POEO Act did not identify any licences applications or notices for the site and immediate surroundings.

The site has not been notified to the EPA as containing significant contamination.

3.3 SafeWork NSW Dangerous Goods Records

Given the site/broader precinct land uses and setting, it is not warranted to obtain records of stored Dangerous Goods held by SafeWork NSW.

3.4 EPA Per- and Poly- Fluoroalkyl Register

A search of the EPA's public per- and poly- fluoroalkyl substances register indicated that there were no records pertaining to the site or areas immediately surrounding the site, see **Appendix E**.

3.5 Integrity Assessment

The information obtained from formal published sources noted above and supported by the site inspection (see **Section 2.2**), has been found to be in general agreement with the known history of the site.

Based on the range of sources and the general consistency of the historical information, it is considered that the historical assessment has an acceptable level of accuracy with respect to the potentially contaminating activities that historically occurred on site.

4. WSP Intrusive Assessment

4.1 Sampling and Analysis Program

WSP (2021) conducted an intrusive investigation to characterise the site soils and is provided in **Attachment B**. The sampling and analysis program was designed with reference to the site's history, principally the potential presence of contaminated fill and the location of former dams. The purpose of the program was to provide a preliminary assessment of the soil conditions across the site. The sampling locations were placed in part to provide good coverage of the site, in a quasi-targeted sampling plan to include the proposed building area and areas of potential contamination.

The investigation consisted of 10 test pits, five boreholes and seven stockpile sample locations.

4.2 Field Observations

A general soil description is provided in the Environmental Due Diligence for the test pits and boreholes locations. The soils generally have surficial sandy clays as topsoils from 0.0- to 0.1 m below ground surface (bgs), followed by a reworked silty clay fill from 0.1 to 2.5 bgs with minor concrete observed in one test pit, underlain by a natural silty clay and sandy clay layer from 0.1 to 4.6m bgs, encountering a weathered siltstone as bedrock at 1.0 to 5.0 m bgs.

No groundwater was encountered during the intrusive investigation. The WSP Environmental Due Diligence Report is provided in **Attachment B.**

4.3 Laboratory Analysis

Recovered samples were sent to the laboratory, however only select samples were analysed. All five samples collected from the stockpiles were analysed, while a single sample from each borehole and test pit from varying depths were selected for analysis. Samples were analysed based on a conceptual site model developed which identified contaminants of concern, which included benzene, toluene, ethyl benzene and xylene (BTEXN), total recoverable hydrocarbons (TRH), polycylic aromatic hydrocarbons (PAH), heavy metals, and asbestos.

The analytical results were compared against the Schedule B1 NEPM health investigation levels for commercial/industrial sites (HIL D), the ecological investigation levels (EILs) and the ecological screening levels (ESLs) for commercial/industrial sites.

The laboratory results for the samples were presented as follows:

- Laboratory analytical results for TRH, BTEXN and PAHS were all below the laboratory limit of reporting;
- Laboratory analytical results for heavy metals were all below the adopted NEPM HILs, EILs and ESLs; and
- No asbestos was detected in the soil samples submitted for analysis, and no potential asbestos containing material (ACM) was observed during the site works.

WSP (2021) note in its conclusions that while the site soils are assessed as being free from contamination, further investigations may be warranted if the proposed future land use scenario changes for the site. The WSP Environmental Due Diligence Report is provided in **Attachment B.**

5. SEARS Compliance

The Environmental Due Diligence report (WSP 2021) and updated database searches are considered to satisfy the SEARs condition 16 as it relates to the contamination and remediation of the site. As outlined in the State Environmental Planning Policy 55:

"*A detailed investigation is only necessary when a preliminary investigation indicates that the land is contaminated or that it is, or was, formally used for an activity listed in Table 1 and a land use change is proposed that has the potential to increase the risk of exposure to contamination.*"

The site has previously been used for agricultural/grazing purposes, which is one of the activities listed in Table 1 of SEPP55 guidelines. However, the future commercial/industrial land use of the site will be less sensitive than the former agricultural land use of the site. Therefore, a detailed site investigation is not required. Nevertheless, intrusive investigations (see **Section 4** and **Attachment B**) confirm that analytes assessed were either below the laboratory reporting limit or the adopted site criteria, including below the ecological investigation/screening levels.

The Environmental Due Diligence (WSP 2021) and updated database searches satisfies the requirement of a preliminary site investigation as outlined in condition 16 of the SEARs and no other contamination assessments are considered necessary under SEP55. Therefore condition 16 of the SEARs is satisfied.

It is recommended that an unexpected finds protocol be included in future construction management plans made for the proposed development.

6. Conclusions

The Environmental Due Diligence undertaken by WSP (2021), and updated database searches are considered to have appropriately characterised the status of contamination on the site.

The Environmental Due Diligence is considered to have satisfied the project SEARs in relation to the requirements for the site contamination by complying all SEPP55 requirement, and the site is suitable for a warehouse and distribution centre.

It is recommended an unexpected finds protocol be included in future construction management plans made for the proposed development.

7. Limitations

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

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

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

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

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

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

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

Figures

Legend

Approximate Site Boundary

JBS&G

Job No: 62144	
Client: Tactical Group	
Version: R01 Rev A	Date 5/11/2021
Drawn By: JA	Checked By: DH

Scale 1:10,000

0 150 300

metres

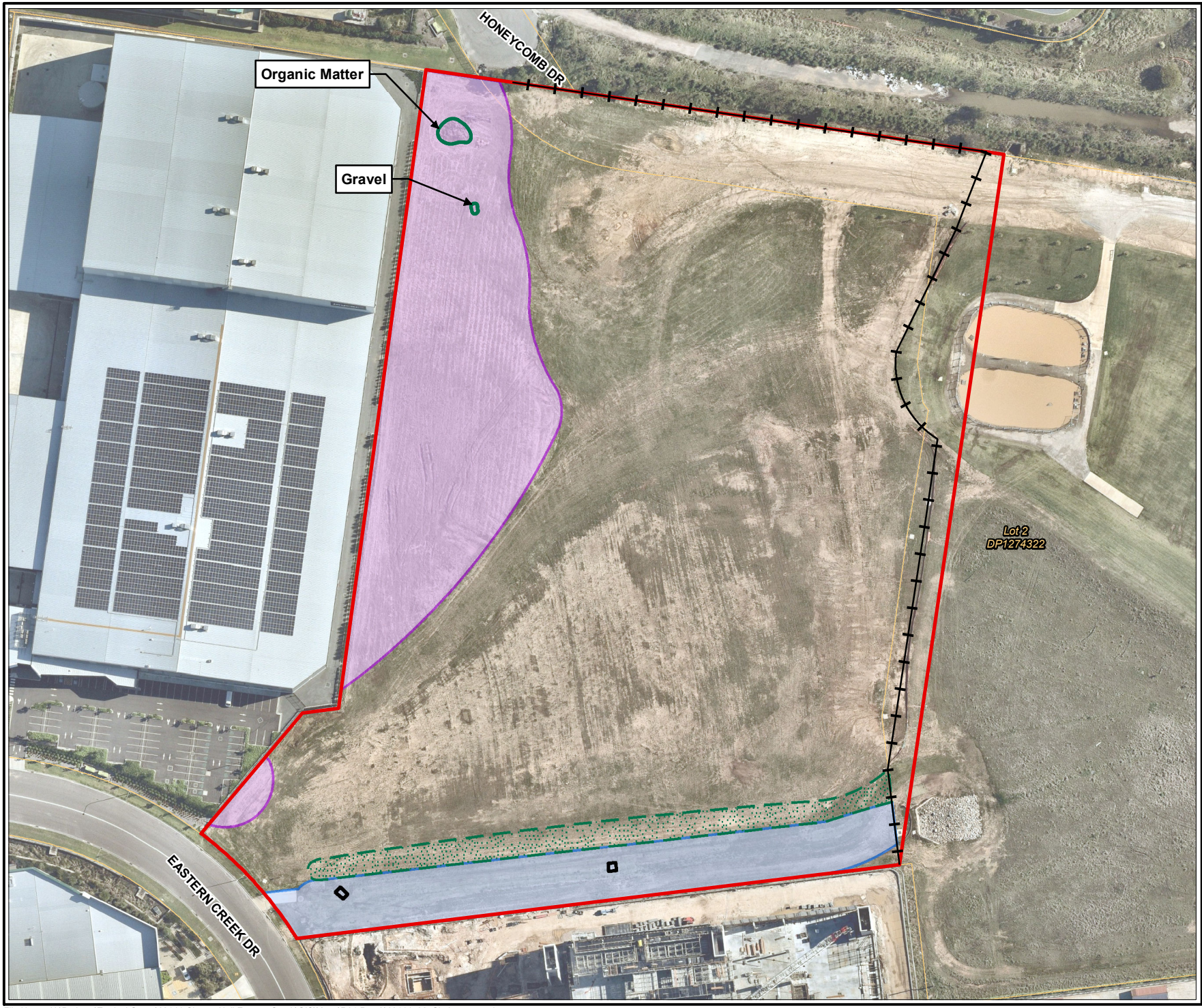
Coord. Sys. GDA 1994 MGA Zone 56

Eastern Creek Drive, Eastern Creek, NSW

SITE LOCATION

FIGURE 2

File Name: N:\Projects\Tactical Group\62144 Charter Hall Eastern Creek\GIS\Maps\R01 Rev A\62144_01_SiteLocation.mxd



Legend

- Approximate Site Boundary
- NSW Cadastre (DFSI, 2021)
- Stockpile

Site Features

- Earth Bund
- Raised Land
- Stormwater Drains
- Swale
- Fence Line

JBS&G

Job No: 62144

Client: Tactical Group

Version: R01 Rev A	Date 10/11/2021
Drawn By: JA	Checked By: DH

Scale 1:1,750

0 25 50

metres

Coord. Sys. GDA 1994 MGA Zone 56

Eastern Creek Drive,
Eastern Creek, NSW

SITE LAYOUT

FIGURE 3

File Name: N:\Projects\Tactical Group\62144 Charter Hall Eastern Creek\GIS\Maps\R01 Rev A\62144_02_SiteLayout.mxd
Reference: Nearmap - www.nearmap.com.au (Capture Date: 17/10/2021)

Appendix A SEARs, proposed warehouses and distribution centre at Eastern Creek

Planning Secretary's Environmental Assessment Requirements

Warehouses and distribution centres

Development details

Application number	SSD-30923027
Project name	Compass 2 Warehouse & Distribution Centre
Location	Lot 1 DP1274322 within Blacktown
Applicant	CHARTER HALL HOLDINGS PTY. LIMITED
Date of issue	08/11/2021

Content and guidance

Any Environmental Impact Statement (EIS) must meet the minimum form and content requirements as prescribed by Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation) and the *State Significant Development Guidelines*.

Relevant policies and guidelines can be found at https://www.planningportal.nsw.gov.au/major-projects/assessment/policies-and-guidelines.

Key issues and documentation

Issue and Assessment Requirements	Documentation
1. Statutory Context • Address all relevant legislation, environmental planning instruments (EPIs) (including drafts), plans, policies and guidelines. • Identify compliance with applicable development standards and provide a detailed justification for any non-compliances. • If the development is only partly State significant development (SSD) under clause 8(1) of the State and Regional Development SEPP, provide an explanation of how the remainder of the development is sufficiently related to the component that is SSD. • Address the requirements of any approvals applying to the site, including any concept approval or recommendation from any Gateway determination.	• Address in EIS
2. Capital Investment Value and Employment • Provide a detailed calculation of the capital investment value (CIV) of the development, prepared by a qualified quantity surveyor. • Provide an estimate of the retained and new jobs that would be created during the construction and operational phases of the development, including details of the methodology to determine the figures provided.	• Cost Summary Report

3. Design Quality
• Demonstrate how the development will achieve:
  ○ design excellence in accordance with any applicable EPI provisions.
  ○ good design in accordance with the seven objectives for good design in *Better Placed*.
• Where required by an EPI or concept approval, demonstrate how the development has been subject to a competitive design process or reviewed by the State Design Review Panel (SDRP). Recommendations are to be addressed prior to lodgement.
	• Address in EIS
	If required:
	• Design Review Report (where the project has been reviewed by the SDRP)
	• Design Excellence Strategy (where design excellence is required by an EPI)
	• Competition Report (where a competitive design process has been held)

4. Built Form and Urban Design • Explain and illustrate the proposed built form, including a detailed site and context analysis to justify the proposed site planning and design approach. • Demonstrate how the proposed built form (layout, height, bulk, scale, separation, setbacks, interface and articulation) addresses and responds to the context, site characteristics, streetscape and existing and future character of the locality. • Demonstrate how the building design will deliver a high-quality development, including consideration of façade design, articulation, materials, finishes, colours, any signage and integration of services. • Assess how the development complies with the relevant accessibility requirements.	• Architectural drawings • Design Report • Survey Plan • Building Code of Australia Compliance Report • Accessibility Report
5. Visual Impact • Provide a visual analysis of the development from key viewpoints, including photomontages or perspectives showing the proposed and likely future development. • Where the visual analysis has identified potential for significant visual impact, provide a visual impact assessment that addresses the impacts of the development on the existing catchment.	• Visual Analysis • Visual Impact Assessment
6. Traffic, Transport and Accessibility • Provide a transport and accessibility impact assessment, which includes: ○ details of all traffic types and volumes likely to be generated during construction and operation, including a description of key access and haul routes.	• Transport and Accessibility Impact Assessment • Construction Traffic Management Plan

○ an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections (using industry standard modelling). ○ plans demonstrating how all vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing in the street network. ○ details and plans of any proposed internal road network, loading dock provision and servicing, on-site parking provisions, and sufficient pedestrian and cyclist facilities, in accordance with the relevant Australian Standards. ○ swept path analysis for the largest vehicle requiring access to the development. ○ details of road upgrades, infrastructure works, or new roads or access points required for the development if necessary. • Provide a Construction Traffic Management Plan detailing predicted construction vehicle movements, routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.	• Green Travel Plan or equivalent
7. Trees and Landscaping • Provide a detailed site-wide landscape plan, that: ○ identifies the number and location of trees to be removed and retained, and how opportunities to retain significant trees have been explored and/or informs the plan. ○ details the proposed site planting, including location, number and species of plantings, heights of trees at maturity and proposed canopy coverage. ○ demonstrates how the proposed development would: ▪ contribute to long term landscape setting in respect of the site and streetscape. ▪ mitigate the urban heat island effect and ensure appropriate comfort levels on-site. ▪ contribute to the objective of increased urban tree canopy cover. ▪ maximise opportunities for green infrastructure, consistent with *Greener Places*.	• Landscape Plan
8. Ecologically Sustainable Development (ESD) • Identify how ESD principles (as defined in clause 7(4) of Schedule 2 of the EP&A Regulation) are incorporated in the design and ongoing operation of the development. • Demonstrate how the development will meet or exceed the relevant industry	• ESD Report

recognised building sustainability and environmental performance standards. • Demonstrate how the development minimises greenhouse gas emissions (reflecting the Government's goal of net zero emissions by 2050) and consumption of energy, water (including water sensitive urban design) and material resources.	
9. Biodiversity • Assess any biodiversity impacts associated with the development in accordance with the *Biodiversity Conservation Act 2016* and the *Biodiversity Assessment Method 2020*, including the preparation of a Biodiversity Development Assessment Report (BDAR), unless a waiver is granted, or the site is on biodiversity certified land. • If the development is on biodiversity certified land, provide information to identify the site (using associated mapping) and demonstrate the proposed development is consistent with the relevant biodiversity measure conferred by the biodiversity certification.	• Biodiversity Development Assessment Report or BDAR Waiver
10. Air Quality • Identify significant air emission sources at the proposed development (during construction and operation), assess their potential to cause adverse off-site impacts, and detail proposed management and mitigation measures that would be implemented. Where air emissions during operation have the potential to cause adverse off-site impacts, provide a quantitative air quality impact assessment prepared in accordance with the relevant NSW Environment Protection Authority (EPA) guidelines.	• Address in EIS If required: • Air Quality Impact Assessment
11. Noise and Vibration • Provide a noise and vibration assessment prepared in accordance with the relevant EPA guidelines. The assessment must detail construction and operational noise and vibration impacts on nearby sensitive receivers and structures and outline the proposed management and mitigation measures that would be implemented.	• Noise and Vibration Impact Assessment
12. Ground and Water Conditions • Provide an assessment of the potential impacts on soil resources, including related infrastructure and riparian lands on and near the site. • Provide an assessment of the potential impacts on surface and groundwater resources (quality and quantity), including related infrastructure, hydrology, aquatic and groundwater dependent ecosystems, drainage lines, downstream assets and watercourses. • Identify predicted water discharge points to surface/groundwater and consider discharge quality against relevant water quality criteria. • Provide a detailed site water balance including identification of water	• Geotechnical Assessment • Surface and Groundwater Impact Assessment • Salinity Management Plan and/or Acid Sulfate Soils Management Plan

requirements for the life of the development, and measures to ensure an adequate and secure water supply. • Provide an assessment of salinity and acid sulfate soil impacts.	

13. Stormwater and Wastewater
• Provide an Integrated Water Management Plan for the development that:
  ○ is prepared in consultation with the local council and any other relevant drainage or water authority.
  ○ details the proposed drainage design for the site including any on-site detention facilities, water quality management measures and the nominated discharge points, on-site sewage management, and measures to treat, reuse or dispose of water.
  ○ demonstrates compliance with the local council or other drainage or water authority requirements and avoids adverse impacts on any downstream properties.
• Where drainage infrastructure works are required that would be handed over to the local council, or other drainage or water authority, provide full hydraulic details and detailed plans and specification of proposed works that have been prepared in consultation with, and comply with the relevant standards of, the local council or other drainage or water authority.
	• Integrated Water Management Plan

14. Flooding Risk • Identify any flood risk on-site having regard to adopted flood studies, the potential effects of climate change, and any relevant provisions of the *NSW Floodplain Development Manual*. • Assess the impacts of the development, including any changes to flood risk on-site or off-site, and detail design solutions and operational procedures to mitigate flood risk where required.	• Flood Risk Assessment
15. Hazards and Risks • Where there are dangerous goods and hazardous materials associated with the development provide a preliminary risk screening in accordance with SEPP 33. • Where required by SEPP 33, provide a Preliminary Hazard Analysis prepared in accordance with *Hazardous Industry Planning Advisory Paper No.6 – Guidelines for Hazard Analysis*. • If the development is adjacent to or on land in a pipeline corridor, report on consultation outcomes with the operator of the pipeline, and prepare a hazard analysis.	• Preliminary Hazard Analysis
16. Contamination and Remediation • In accordance with SEPP 55, assess and quantify any soil and groundwater	• Preliminary Site Investigation

contamination and demonstrate that the site is suitable (or will be suitable, after remediation) for the development.	If required: • Detailed Site Investigation • Remedial Action Plan • Preliminary Long-term Environmental Management Plan
17. Waste Management • Identify, quantify and classify the likely waste streams to be generated during construction and operation. • Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. • Identify appropriate servicing arrangements for the site. • If buildings are proposed to be demolished or altered, provide a hazardous materials survey.	• Waste Management Plan • Hazardous Material Survey
18. Aboriginal Cultural Heritage • Provide an Aboriginal Cultural Heritage Assessment Report prepared in accordance with relevant guidelines, identifying, describing and assessing any impacts for any Aboriginal cultural heritage values on the site.	• Aboriginal Cultural Heritage Assessment Report
19. Environmental Heritage • Where there is potential for direct or indirect impacts on the heritage significance of environmental heritage, provide a Statement of Heritage Impact and Archaeological Assessment (if potential impacts to archaeological resources are identified), prepared in accordance with the relevant guidelines, which assesses any impacts and outlines measures to ensure they are minimised and mitigated.	• Statement of Heritage Impact • Archaeological Assessment
20. Social Impact • Provide a Social Impact Assessment prepared in accordance with the *Social Impact Assessment Guidelines for State Significant Projects*.	• Social Impact Assessment
21. Infrastructure Requirements and Utilities • In consultation with relevant service providers: o assess the impacts of the development on existing utility infrastructure and service provider assets surrounding the site. o identify any infrastructure upgrades required on-site and off-site to facilitate the development and any arrangements to ensure that the	• Infrastructure Delivery, Management and Staging Plan

upgrades will be implemented on time and be maintained. ○ provide an infrastructure delivery and staging plan, including a description of how infrastructure requirements would be co-ordinated, funded and delivered to facilitate the development.	
22. Bush Fire Risk • If the development is on bush fire prone land, provide a bush fire assessment that details proposed bush fire protection measures and demonstrates compliance with *Planning for Bush Fire Protection*.	• Bush Fire Assessment
23. Construction, Operation and Staging • If staging is proposed, provide details of how construction and operation would be managed and any impacts mitigated.	• Address in EIS
24. Contributions and Public Benefit • Address the requirements of any relevant contribution plan(s), planning agreement or EPI requiring a monetary contribution, dedication of land and/or works-in-kind and include details of any proposal for further material public benefit. • Where the development proposes alternative public benefits or a departure from an existing contributions framework, the local council, the Department and relevant State agencies are to be consulted prior to lodgement and details, including how comments have been addressed, are to be provided.	• Address in EIS
25. Engagement • Detail engagement undertaken and demonstrate how it was consistent with the *Undertaking Engagement Guidelines for State Significant Projects*. Detail how issues raised and feedback provided have been considered and responded to in the project. In particular, applicants must consult with: ○ the relevant Department assessment team. ○ any relevant local councils. ○ any relevant agencies. ○ the community. ○ if the development would have required an approval or authorisation under another Act but for the application of s 4.41 of the EP&A Act or requires an approval or authorisation under another Act to be applied consistently by s 4.42 of the EP&A Act, the agency relevant to that approval or authorisation.	• Engagement Report

Appendix B Environmental Due Diligence Assessment (WSP 2021)

CHARTER HALL

ENVIRONMENTAL DUE DILIGENCE ASSESSMENT - PHASE I AND II - EASTERN CREEK DRIVE

Question today
Imagine tomorrow
Create for the future

Environmental Due Diligence Assessment - Phase I and II - Eastern Creek Drive
Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766

Charter Hall

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REV	DATE	DETAILS
A	30/11/2020	Draft
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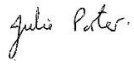
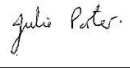
Reviewed by:	Julie Porter	03/09/2021	
Approved by:	Julie Porter	03/09/2021	

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EXECUTIVE SUMMARY

WSP Australia Pty Ltd (WSP) was engaged by Charter Hall Holdings Pty Ltd (Charter Hall) to conduct a Phase I Environmental Due Diligence (EDD) Assessment of the property located at Lot 4002 Eastern Creek Drive, Eastern Creek, NSW, 2766 ('Site').

WSP understands that the project objective is to identify and assess potential environmental risks and issues at the subject property ('the Site') in the context of a proposed acquisition and development of a 25,500 m^2 warehouse with ancillary offices, loading dock and car parking. The scope of works completed as part of this Phase I and II EDD included a desktop study to review the Site environmental setting, history and environmental regulatory status and an intrusive site assessment comprising the excavation of 10 test pits, drilling of 5 boreholes and laboratory analysis of soil samples.

The Site comprises the western portion of a larger lot which covers an approximate area of 48,000 m^2 and is legally identified as Lot 4002 in DP1243178. The Site is an undeveloped block of land which is currently undergoing cut and fill earthworks to level before subdivision of the lot, for proposed future development. The Site is located on Eastern Creek Drive in Eastern Creek, and the current surrounding land uses are primarily industrial. Historically, the Site has been vacant land since at least 1965 until 2009 when it was used for stockpile storage and was developed with a detention basin. It has subsequently been used for further stockpile storage and to access the adjacent properties.

A search of the NSW EPA Contaminated Sites database (www.epa.nsw.gov.au/prclmapp/searchregister), conducted 9 November 2020, indicated that neither the Site nor the surrounding properties are currently registered on the list of sites notified to NSW EPA, or currently regulated by the NSW EPA as a contaminated site.

A search of the NSW EPA Protection of the Environment Act, public register of licence, applications and notices was conducted on 10 November 2020. The search did not identify any record for the Site or for any properties located immediately adjacent to the Site currently licenced under the *Protection of the Environment Operations Act 1997*. The nearest licenced activity is held approximately 1 km to the north west of the Site. DIAL-A-DUMP (EC) Pty Ltd holds a POEO licence for Composting, Recovery of general waste and Waste storage – other types of waste (EPL: 13426).

WSP undertook intrusive assessment works on 18 November 2020. The investigation identified that the Site is underlain by fill comprising reworked natural silty clay and sandy clay to a maximum depth of 2.5 mBGL. The fill was underlain by natural silty clay and sandy clay to a maximum depth of 4.6 mBGL, underlain by extremely weathered siltstone to the maximum investigation depth of 5.0 mBGL.

No contaminants of concern in soil were reported at concentrations above the adopted investigation criteria for commercial/industrial land use.

Surface soils are generally slightly to moderately saline. Salinity on the Site appears to generally increase with depth and in areas of lower elevation. During intrusive investigation no evidence of shallow groundwater (<1m) was observed. Deeper structures (including footings, piles and service trenches) extending into the siltstone lithology should have salinity resistant materials incorporated into their design. Based on the results from this preliminary investigation salinity does not present a significant risk of corrosion to shallow structures. To minimise the impact of the water and salt processes on the development, possible management options may include careful installation of damp-proof courses and good site drainage.

Soils tested on the Site were generally sodic in nature. Sodic soils present an elevated erosion hazard on-site. Development works should be planned to accommodate for the elevated potential for erosion and sediment generation in runoff and the final development should ensure adequate protection of soils (e.g. through maintenance of vegetation coverage).

Further investigations may be warranted if the proposed future land-use scenario changes for the Site.

1 PROJECT BACKGROUND

1.1 BACKGROUND

WSP Australia Pty Ltd (WSP) was engaged by Charter Hall Holdings Pty Ltd (Charter Hall) to conduct a Phase I and II Environmental Due Diligence (EDD) Assessment of the property located at Lot 4002, Eastern Creek Drive, Eastern Creek, NSW, 2766 ('Site').

WSP understands that the project objective is to identify and assess potential environmental risks and issues at the Site in the context of a proposed acquisition and development of a 25,500 m^2 warehouse with ancillary offices, loading dock and car parking.

Various background and historical information provided by the Client and via online databases is referred to in this EDD report.

EDD works were undertaken in general accordance with WSP's proposal dated 4 November 2020.

1.2 OBJECTIVES

The objective of the Phase I and II assessment was to collect environmental data, to support Charter Hall's due diligence for their proposed acquisition of the Site. The assessment was required to generally comply with the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM; as amended 2013), to evaluate the Site with respect to:

- potential contamination and salinity hazard of soil;
- the Site's suitability for ongoing commercial/industrial land use, inclusive of a proposed redevelopment for warehousing purposes; and
- any other environmental matters of potential concern relating to contamination in soil, environmental planning and environmental compliance which may affect or restrict the potential feasibility of the acquisition and subsequent redevelopment of the Site.

1.3 SCOPE

The following scope of work was completed:

- a desktop study of the Site to gather the following information:
  - property details and location;
  - current and proposed land use, Site zoning and environmental planning controls;
  - geology and hydrogeology, including topography and local and regional soil types and landscapes;
- a review of historical Site documentation including:
  - current and former use of the Site;
  - historical aerial photographs;
  - contaminated land records held by the Environment Protection Authority (EPA);
  - bore records held by the NSW Department of Industry;
- a site inspection/walkover;

- excavation of 10 test pits and drilling of 5 boreholes, which targeted:
  - shallow soils across the Site;
  - deeper soils of the natural soil profile at selected locations across the Site;
- collection of soil samples from each of four separate stockpile areas observed on Site;
- analysis of soil samples for a selection of total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAHs) and heavy metals and asbestos for the contamination assessment; and
- analysis of cation exchange capacity (CEC), chloride and sulfate concentration and pH/EC for the salinity assessment.

2 SITE DESCRIPTION

2.1 SITE DETAILS

Details of the Site location, ownership, zoning and current Site use are provided in Table 2.1 below (refer to Figure 1, Appendix A for a Site location plan and Figure 2, Appendix A for a Site layout plan).

Table 2.1 Site identification

Site Address	Lot 4002, Eastern Creek Drive, Eastern Creek NSW, 2766
Legal Description	Part Lot 4002 In Deposited Plan (DP) 1243178
Size	The larger lot is approximately 48,000 m^2 and the proposed development comprises a warehouse with an area of approximately 25,500 m^2
Current Site Use	Vacant land currently under development with earthworks taking place on the Site and on the site to the east
Zoning	WSEA – SEPP (Western Sydney Employment Area) 2009
Local Planning Instrument	Blacktown Local Environmental Plan 2015

2.2 SITE LAYOUT AND OPERATIONS

A Site inspection was completed on 17 November 2020 prior to the intrusive assessment works.

The Site is currently undergoing cut and fill earthworks to level before subdivision of the lot, for proposed future development. The majority of the Site has been filled with material from the site to the east. Stockpiles of reworked natural material and commercial backfill material are stored on Site. Subsurface infrastructure, possibly related to existing Sydney Water infrastructure in this area, is being installed in the southern portion of the Site. There are no buildings located on the Site. No visual indicators of salinity such as stressed vegetation, water logging or salt deposition were noted.

Relevant photographs were taken during the inspection and are provided in a photolog in Appendix E.

2.3 CLIENT PROVIDED INFORMATION

WSP were not provided with any previous contamination assessment reports pertaining to the Site.

3 SITE HISTORY

3.1 HISTORICAL AERIAL PHOTOGRAPHS

A review of historical aerial photography covering the Site and surrounding area was undertaken with a summary of the observed land-use changes described in Table 2.2 using freely accessible aerial photographs. Historical aerial photographs are included in Appendix F.

Table 3.1 Historical Aerial Photograph Review

YEAR	SITE	SURROUNDING LAND
1965	The Site was vacant land. A small unnamed watercourse (tributary of Eastern Creek) traversed the Site from the middle of the eastern boundary towards a small dam located in the south-western portion of the Site.	Immediate land surrounding all boundaries of the Site appeared to be agricultural/grazing land. Some trees were present along the northern Site boundary. There were several small watercourses surrounding the Site to the east and west.
1975	No apparent changes to the Site.	No apparent changes to the surrounding area.
1978	No apparent changes to the Site.	No apparent changes to the surrounding area.
1986	No apparent changes to the Site. The dam appeared to be smaller, possibly due to decreased rainfall at the time the photograph was taken.	Multiple roads had been constructed north of the Site boundary. The trees and small watercourses were still present surrounding the Site.
1991	No apparent changes to the Site.	Increased density of vegetation to the north of the Site.
2004	The small watercourse running through the Site appeared to be dry. The dam was also dry No apparent changes to the Site.	A building had been constructed to the north east of the northern Site boundary.
2009	The Site appeared to have been cleared of grass in several locations. Numerous small stockpiles were stored in the northern central portion of the Site. A rock-filled detention basin had been constructed immediately to the east of the dam. Some earth movement had taken place in the north-east portion of the Site. The dam had changed shape and extended further towards the centre of the Site.	Several buildings and a road had been constructed to the south-west and west of the Site. Grass had been cleared from surrounding land parcels to the south and west.

YEAR	SITE	SURROUNDING LAND
2014	No apparent changes to the Site with the exception of a dam located to the east of the Site which encroached upon the centre of the eastern Site boundary. The Site entry appeared to be more frequently used or possibly filled due to the lighter coloured dirt and there were access roads to the site to the west.	A dam has been constructed to the north-east of the Site. Buildings have been constructed to the south-west.
2018	Some additional clearing of grass in the eastern portion of the Site had occurred. The area around the detention basin had possibly been filled, as indicated by a different colour site surface.	Several new warehouse type buildings had been constructed to the north and west of the Site. The site to the south-west has possibly been filled and there is a second detention basin located to the east.
August 2020	Stockpiles were present in the north-east corner and to the west of the dam. Installation of subsurface infrastructure parallel to the southern Site boundary was visible. Dial before you dig plans indicate Sydney Water infrastructure in this location.	Several new warehouse type buildings had been constructed to the west, including one immediately adjacent to the Site, and south-west.
October 2020	The Site was used as a haul road for accessing the property to the east. Small stockpiles of gravel were visible in the southern portion of the Site. The south-west corner of the Site appeared to have been levelled. The stockpiles in the north-west of the Site were still visible. Some of the stockpiles in the north-east and west of the Site are still visible but some had been removed or levelled. The detention basin in the east of the Site had been backfilled as had the dam in the centre of the Site.	Earth movements on the site to the east had increased and several stockpiles were visible on the site.

From observations during the Site inspection and a review of historical information and photographs, the Site has been vacant land since at least 1965 until 2009 when it was used for stockpile storage and was developed with a detention basin. It has subsequently been used for further stockpile storage and to access the adjacent properties. The source of these stockpiles is not known. The Site has been surrounded by industrial buildings since approximately 2009.

3.2 CONTAMINATED LAND DATABASE

A search of the NSW EPA Contaminated Sites database (www.epa.nsw.gov.au/prclmapp/searchregister), conducted 9 November 2020, indicated that neither the Site nor the surrounding properties are currently registered on the list of sites notified to NSW EPA, or currently regulated by the NSW EPA as a contaminated site.

3.3 PROTECTION OF THE ENVIRONMENT OPERATIONS REGISTER SEARCH

A search of the NSW EPA Protection of the Environment Act, public register of licence, applications and notices was conducted on 10 November 2020 investigation (http://www.epa.nsw.gov.au/licensing-and-regulation/). The register contains information on:

- Environment protection licences;
- Applications for new licences and the transfer or variance of existing licences;
- Environment protection and noise control notices;
- Penalty notices issued by the EPA;
- Convictions in prosecutions under the POEO Act;
- The results of civil proceedings;
- Licence review information;
- Exemptions from the provisions of the POEO Act or regulations;
- Approvals granted under clause 9 of the POEO (Control of Burning) Regulation;
- Approvals granted under clause 7A of the POEO (Clean Air) Regulation;
- Any mandatory audits required to be undertaken in relation to a licence;
- Every pollution study required by a condition of a licence;
- Every pollution reduction program required by a condition of a licence; and
- Each penalty notice issued in relation to the premises.

The search did not identify any record for the Site or for any properties located immediately adjacent to the Site to be currently licenced under the *Protection of the Environment Operations Act 1997.*

The nearest licenced activity is approximately 1 km to the north-west of the Site. DIAL-A-DUMP (EC) Pty Ltd holds a POEO licence for Composting, Recovery of General Waste and Waste storage – other types of waste (EPL: 13426).

3.4 ZONING, PLANNING RESTRICTIONS AND PERMISSIBLE USE

The Blacktown Local Environmental (LEP) Plan 2015 maps indicated the Site is zoned WSEA – Western Sydney Employment Area (Employment).

According to the *State Environmental Planning Policy No 59 – Central Western Sydney Economic and Employment Area* (SEPP 59), the objectives of the Employment area are:

(a) to facilitate employment-generating industrial, manufacturing, warehousing, high technology, storage or research purposes, including ancillary office space, that are consistent with a Precinct plan applying to the land, and

(b) to ensure that development in Central Western Sydney is of a high standard and that the development:

(i) incorporates best practice environmental management techniques and adopts all measures necessary to protect the environment of the zone by reason of:

- emissions (noise, air, liquids or solid wastes), or

• environmental risks (including potentially hazardous and offensive industries), and

(ii) enhances the amenity of Central Western Sydney by including high quality landscaping, signage and fencing, adequate building setbacks, high quality external finishes and is compatible with the scale and character of existing development in the area, and

(iii) encourages an efficient use of resources in the construction and operation of the development, and

(iv) enhances the biodiversity of the region by the retention of significant bushland communities or through the regeneration of bushland communities as part of landscaping, and

(v) enhances or does not degrade the water quality of natural waterways and their riparian zones, and

(vi) enhances and maintains significant Aboriginal heritage values, and

(vii) in so far as it is new development permitted by this Policy, does not prejudice any existing or proposed commercial or industrial centres, and

(c) to allow for a variety of small scale, local services through the provision of commercial, retail and community facilities (such as child care facilities) and other development, but only where it is:

(i) ancillary to the development of land within this zone for a purpose specified in paragraph (a) of these objectives, or

(ii) to provide personal services and community facilities to persons occupied or employed in activities in this zone (or for the benefit of the local neighbourhood), and

(iii) unlikely to prejudice the viability of existing activities and is not prejudicial to the objectives of this zone, and

(d) to allow for local open space that is accessible and well located, that promotes the use and enjoyment of local open space for both residents and the workforce, that may include elements of the natural environment, and that provides for active and passive recreation.

The proposed development is consistent with the objectives of the zoning.

The Site sits within a development precinct to which the Blacktown City Council Precinct Plan - *Employment Lands Precinct Plan* applies. The Precinct Plan outlines specific requirements for any development application submitted within the precinct.

The Site is not located within a biodiversity area or a heritage affected area under the Blacktown LEP (2005).

A search of the NSW Government planning portal was undertaken on 10 November 2020 (https://www.planningportal.nsw.gov.au/spatialviewer/) indicated that the northern portion of the Site is located within a wildfire buffer zone.

4 ENVIRONMENTAL SETTING

4.1 TOPOGRAPHY AND HYDROLOGY

The natural topography of the surrounding area is generally level with an approximate elevation of 60 m Australian Height Datum (AHD).

At the time of the Site inspection the north-west corner of the Site was approximately 3 m higher in elevation than the south-east corner and the Site sloped down towards the south-east.

The nearest natural water body, a small tributary of Eastern Creek, was located on the Site, however, this appears to have been filled in to allow for development of the Site. Reedy Creek is located approximately 900 m south-east of the Site.

4.2 SOILS AND GEOLOGY

Review of the 'Penrith 1:100 000 Geological Map' indicates the Site is underlain by the Cambrian aged Wianamatta Group Bringelly Shale consisting of shale, carbonaceous claystone, claystone, laminate, fine to medium grained sandstone and rare coal and tuff.

A search of the Australian Soil Resource Information System (ASRIS) (www.asris.csiro.au) conducted on 10 November 2020 indicated an extremely low probability of occurrence of acid sulfate soils (ASS) at the Site.

A search of the eSpade land salinity maps (https://www.environment.nsw.gov.au/eSpade2WebApp) conducted on 13 November 2020 indicated a high likelihood of salinity.

4.3 HYDROGEOLOGY

A search of the WaterNSW Continuous Water Monitoring Network database conducted on 9 November 2020 indicated no registered groundwater bores are located within a 500 m radius of the Site.

4.4 SURROUNDING LAND USES

The Site is located within a predominantly industrial area. Adjacent land uses include:

- North: Logistical warehouses and industrial properties with Wonderland Drive beyond.
- East: Eastern portion of Lot 4002 undergoing earthworks with industrial properties (including a pharmaceuticals company) beyond.
- South: A vacant lot with Old Wallgrove Road beyond. Eastern Creek Drive with commercial properties, including a construction equipment supply company and an IT company, are located to the south-east.
- West: Commercial warehouse of unknown use with further warehouses beyond.

4.5 ENVIRONMENTAL SENSITIVITY

The following relate to environmental sensitivity for the area:

- The Site is within a predominantly industrial area with no current residential properties identified within 500 m of the Site.

- The nearest natural water body, a small tributary of Eastern Creek, has previously run through the Site to a small dam that was located near the south-western corner of the Site. Reedy Creek is located approximately 900 m south-east of the Site.
- There is no registered beneficial use of groundwater within a 500 m radius of the Site.
- The Site is located within an area of extremely low probability of occurrence of acid sulfate soils (ASRIS, 2020).
- The Site is located in an area of high probability of land salinity (eSpade).

5 SAMPLING AND ANALYSIS PLAN

5.1 SAMPLING PLAN AND RATIONALE

The sampling and analysis program was designed with reference to the Site's history. The purpose of the program was to provide a preliminary assessment of the soil conditions across the Site, particularly in areas of environmental concern and in areas of the proposed redevelopment. The test pit and borehole locations were placed in part to provide good coverage of the Site, in a quasi-targeted sampling plan to include the proposed building area and areas of potential contamination.

In accordance with NSW EPA *Guidelines for NSW Site Auditor Scheme* and Appendix B of Schedule B2 of the NEPM, the data quality objectives (DQOs) process was used to define the type, quantity and quality of the data needed to support decisions relating to the environmental condition of a site.

Sampling locations are summarised in Table 5.1.

Table 5.1 Sampling rationale

LOCATION ID	DEPTH (mBGL)	TYPE	RATIONALE
TP01	1.6	Test pit	To assess potential contamination of fill and natural soils
TP02	2.0	Test pit	To assess potential contamination of fill and natural soils
TP03	1.0	Test pit	To assess potential contamination of fill and natural soils
TP04	0.8	Test pit	To assess potential contamination of fill and natural soils
TP05	2.0	Test pit	To assess potential contamination of fill and natural soils and to target the former dam location
TP06	3.1	Test pit	To assess potential contamination of fill and natural soils
TP07	2.3	Test pit	To assess potential contamination of fill and natural soils
TP08	3.1	Test pit	To assess potential contamination of fill and natural soils and to target the former dam location
TP09	1.0	Test pit	To assess potential contamination of fill and natural soils
TP10	0.8	Test pit	To assess potential contamination of fill and natural soils
BH01	5.0	Soil bore	For geotechnical assessment of the proposed warehouse building and also assess potential contamination of fill and natural soils
BH02	5.0	Soil bore	For geotechnical assessment of the proposed warehouse building, to target the former detention basin location and also assess potential contamination of fill and natural soils
BH03	5.0	Soil bore	For geotechnical assessment of the proposed warehouse building and also assess potential contamination of fill and natural soils
BH04	5.0	Soil bore	For geotechnical assessment of the proposed warehouse building and also assess potential contamination of fill and natural soils
BH05	2.65	Soil bore	For geotechnical assessment of the proposed warehouse building and also assess potential contamination of fill and natural soils

LOCATION ID	DEPTH (mBGL)	TYPE	RATIONALE
SP1-1 to SP1-3, SP2-1 to SP2-3 SP3-1, SP4-1 and SP4-2	-	Stockpile samples	Collected from each of the four distinct areas of stockpiles observed on Site to assess potential contamination.

5.2 FIELDWORK

The sampling program was undertaken on 18 November 2020, and comprised:

- excavating of 10 test pits (TP01 to TP10) and drilling of 5 boreholes (BH01 to BH05) in accessible areas across the Site;
- collection of soil samples from each test pit and borehole for subsequent selective laboratory analysis; and
- screening of the field samples using a photo-ionisation detector (PID) to assess the presence of any volatile organic compounds.

5.2.1 PRELIMINARIES

A health, environment and safety plan (HESP) was prepared prior to going to site. In accordance with WSP policy, all works were undertaken in accordance with the HESP.

A walkover was conducted at the Site prior to intrusive works. The findings are documented in Section 2. All Site locations were cleared by a suitably qualified service locator prior to the commencement of intrusive works, utilising Dial Before You Dig plans provided by asset owners.

5.2.2 FIELD METHODOLOGY

The fieldworks methodologies adopted during the ESA were consistent with WSP field procedures. These have been summarised in Table 5.2.

Table 5.2 Field methodology

TASK	DESCRIPTION
Service clearance	A suitably qualified service locator undertook service clearance of all sampling locations prior to commencement of test pitting and drilling works. All test pits and soil bores were placed greater than 3 m from identified services.
Concrete coring	No concrete coring was required.
Soil investigation works – test pitting works	An excavator equipped with a batter bucket and a toothless bucket was used to advance 10 test pits to a maximum depth of 3.1 metres below ground level (mBGL) under the supervision of a WSP environmental scientist. Soil samples were collected directly from the excavator bucket.
Soil investigation - drilling works	Soil bores were drilled using solid flight augers and samples were collected to provide an assessment of the contamination status of the Site. Soil logging was conducted during the investigation works by an experienced geotechnical engineer.

TASK	DESCRIPTION
Soil sampling – test pitting and bore drilling	Soil samples were generally collected from 0.1-0.2 m below ground level (BGL), 0.5 mBGL, 1.0 mBGL, 1.5 mBGL. Samples were also collected from both fill and natural material for all locations. Generally, one sample from each test pit and borehole was analysed based on field observations. All soil samples collected during the works were screened with a calibrated PID to assess if volatile organic compounds (VOCs) are present. Samples were collected directly from the excavator bucket or auger flights. Sampling equipment was cleaned with suitable phosphate-free detergent and rinsed with distilled water between sampling episodes to minimise the potential for cross-contamination.
Soil sampling - stockpiles	Soil samples were collected directly from approximately 0.2 m depth into the stockpiles by shovel using disposable nitrile gloves, which were changed between each sample location.
Soil sample storage	Samples were stored in an insulated cooler box containing ice bricks immediately after sampling, to ensure samples were kept chilled prior to and during delivery to the selected NATA accredited laboratory. Suspected asbestos containing material (ACM) samples were collected from the stockpile material and double bagged into zip-lock plastic bags for transportation to a NATA accredited laboratory for analysis.
Quality assurance/ quality control (QA/QC)	Field methodology followed standard industry protocols, with regard to the number of QA/QC samples (intra and inter-laboratory duplicates, rinsate samples and trip blanks). Intra- and inter-laboratory duplicates were collected at a rate exceeding 1 in 20 soil samples, a rinsate blank was taken each day of the investigative works
Waste disposal	Excess soil resulting from drilling was used to reinstate the soil test pits and bores.

5.3 LABORATORY ANALYSIS

Primary soil samples were sent to ALS Environmental Pty Ltd (ALS), in Smithfield NSW, and secondary samples were dispatched to Eurofins Environmental Testing Australia Pty Ltd (Eurofins), in Lane Cove NSW. Both laboratories are accredited by the National Association of Testing Authorities (NATA) for the analyses conducted.

Four duplicate soil samples were collected, two for analysis at the primary laboratory and two for analysis at a second, check laboratory. This is discussed further in Section 8.1.1.

Primary and duplicate water samples for rinsate analysis were sent to Eurofins.

A summary of soil samples and analyses is presented in Table 5.3.

Table 5.3 Laboratory analyses summary

ANALYTE	PRIMARY	DUPLICATES
SOIL		
TRH/BTEXN/PAHs	24	4
8 heavy metals	24	4
Asbestos (presence/absence)	24	-
CEC	3	-
Electrical conductivity (EC)	10	-

ANALYTE	PRIMARY	DUPLICATES
pH	17	-
Chloride and sulfate	8	-

6 SOIL ASSESSMENT CRITERIA

To assess the contamination status, the NSW EPA refers to the NEPM (2013), specifically Schedule B1, Investigation Levels for Soil and Groundwater. Schedule B1 provides a framework for the use of investigation and screening levels based on a matrix of human health and ecological risks.

6.1 HEALTH BASED CRITERIA

Schedule B1 of the NEPM (2013) defines health investigation levels (HILs) that have been developed for a broad range of metals and organic contaminants in soil. HILs are scientifically based, generic assessment criteria designed to be used in the first stage (Tier 1 or 'screening') of an assessment of potential risks to human health from chronic exposure to contaminants. The HILs are applicable to all soil types and generally apply to the top 3 m of soil. HILs have been developed for four generic land-use settings:

- HIL A: Residential with garden/accessible soil (homegrown produce <10% fruit and vegetable intake, (no poultry), also includes children's daycare centres, preschools and primary schools)
- HIL B: Residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats
- HIL C: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary school fields and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves) which should be subject to a site-specific assessment where appropriate
- HIL D: Commercial/industrial such as shops, offices, factories and industrial sites.

Taking into consideration the objectives and purpose of the investigation, it is considered appropriate to assess the Site based on both its current and potential uses under the current zoning. The Site is currently zoned WSEA – Western Sydney Employment Area (Employment) under the Blacktown LEP, which permits the use of the Site for commercial/industrial purposes, and the current and proposed uses are commercial/industrial. Therefore, commercial/industrial screening criteria for soil contaminants (HIL D) have been adopted. The HIL assessment criteria are summarised in Table 6.1.

Table 6.1 Soil HILs

ANALYTE	HIL D [(1)] (mg/kg)
Arsenic	3,000
Cadmium	900
Chromium	3,600
Copper	240,000
Lead	1,500
Mercury	730
Nickel	6,000
Zinc	400,000
Benzo(a)pyrene toxic equivalence quotient (BaP TEQ)	40
Total PAHs	4,000

Notes:

(1) NEPM (2013) Schedule B1 investigation Levels for Soil and Groundwater

Health screening levels (HSLs) are applicable to the assessment of vapour intrusion risks arising from petroleum hydrocarbons in contaminated soil. The adopted carbon fraction ranges for the HSLs are based on TRH concentrations after subtraction of BTEX compounds and naphthalene.

The HSLs methodology provides for a greater range of site circumstances including the depth of contamination and soil texture. These HSLs have been developed for sand, silt and clay soils based on soil texture classifications. Where there is reasonable doubt as to the appropriate soil texture to select, either a conservative selection should be made (i.e. select coarsest applicable grain size such as sand) or laboratory analysis carried out to determine particle size and hence soil texture sub-class. For the purposes of this investigation, the most conservative approach will be selected and the adopted assessment criteria will be based on a subsurface profile comprising sand. The HSLs have been incorporated in Schedule B1 in the context of a wider site assessment framework for petroleum hydrocarbon contamination.

The adopted petroleum assessment criteria for soil have been provided in Table 6.2. Based on the Site's current use and allowable use under the zoning, commercial/industrial land (HSL D) criteria has been adopted.

Table 6.2 Soil HSLs for vapour intrusion

ANALYTE	**HSL D, SAND (mg/kg) (1)**			
	0 TO <1 m	1 m TO <2 m	2 m TO <4 m	≥4 m
TRH C_6-C_{10} less BTEX (F1)	260	370	630	NL
TRH >C_{10}-C_{16} less naphthalene (F2)	NL	NL	NL	NL
Benzene	3	3	3	3
Toluene	NL	NL	NL	NL
Ethylbenzene	NL	NL	NL	NL
Xylene	230	NL	NL	NL
Naphthalene	NL	NL	NL	NL

Notes:

(1) NEPM (2013) Schedule B1 investigation Levels for Soil and Groundwater

NL – not limiting i.e. the soil vapour source concentration for a petroleum mixture could not exceed a level that would result in the maximum allowable vapour risk for the given scenario

6.2 ECOLOGICAL BASED CRITERIA

The NEPM (2013) outlines ecological investigation levels (EILs) developed for selected metals and organic substances. These are applicable for assessing risk to terrestrial ecosystems. EILs depend on specific soil physicochemical properties and land-use scenarios and generally apply to the top 2 m of soil. EILs have been developed for three generic land-use settings:

- areas of ecological significance;
- urban residential areas and public open space; and
- commercial and industrial land uses.

Given the zoned land use for the Site, the calculated EILs for commercial and industrial land use have been adopted. The methodology for developing EILs assumes that the ecosystem present at the Site is adapted to the ambient background concentration (ABC) for the locality and that it is only adding contaminants over and above this background concentration which has an adverse effect on the environment. The ABC of a contaminant is, the soil concentration in a

specified locality that is the sum of the naturally occurring background level and the contaminant levels that have been introduced from diffuse or non-point sources by general anthropogenic activity not attributed to industrial, commercial, or agricultural activities, for example, motor vehicle emissions. The added contaminant limits (ACL) is the concentration (above the ABC) of a contaminant, above which further appropriate investigation and evaluation of the impact on ecological values is required.

For initial screening as part of this baseline assessment, ACLs have not been applied. This results in more conservative screening levels for the EILs.

Table 6.3 Soil EILs

ANALYTE	COMMERCIAL AND INDUSTRIAL EILs (1) (mg/kg)
Arsenic	160
Chromium	310
Copper	280
Lead	440
Nickel	110
Zinc	270
Naphthalene	370

Notes:

(2) Ecological investigation levels – Commercial and industrial in sands, Schedule B1 Investigation Levels for Soil and Groundwater NEPM (2013)

Ecological screening levels (ESLs) have been also been developed for selected petroleum hydrocarbon compounds and TRH fractions and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse and fine grained soils and various land uses and, like EILs, are generally applicable to the top 2 m of soil. Natural soils at the Site are clays and silty clays. As such the ESLs defined for fine soil textures have been adopted. The ESLs are outlined in Table 6.4.

Table 6.4 Soil ESLs

ANALYTE	COMMERCIAL AND INDUSTRIAL ESLs(1) (mg/kg)
TRH F1	215
TRH >C_{10}-C_{16}	170
TRH >C_{16}-C_{34}	1,700
TRH >C_{34}-C_{40}	3,300
Benzene	75
Toluene	135
Ethylbenzene	165
Total xylene	180
Benzo(a)pyrene	0.7

Notes:

(3) Ecological screening levels – Commercial and industrial in sands, Schedule B1 Investigation Levels for Soil and Groundwater NEPM (2013).

As with health-based screening levels, these criteria are screening criteria only; exceedances of these criteria are triggers to undertake additional assessment of the risk to terrestrial ecosystems.

6.3 SOIL SALINITY

A potential risk of salinity was identified during the phase 1 assessment based on available mapping. Where a risk is confirmed, salinity issues should be managed during construction through preparing and adopting a salinity management plan. Salinity is also an important consideration for future landscaping of the Site as it affects plant growth. Where there are high salt loads plant yield will be deleteriously affected and more sensitive species will not grow.

To assess the issue of dryland salinity, various soil samples were collected from the natural clay material across the Site. As the *National Environmental Protection (Assessment of Site Contamination) Measure 1999* (NEPM; as amended 2013) provides no guidelines for the classification of soil salinity, classification guidelines from the following three sources are referred to:

- Department of Land and Water Conservation (DLWC), 2002, *Site Investigations for Urban Salinity*;
- DPNR. 2002. *Salinity Potential in Western Sydney*; and
- Western Sydney Regional Organisation of Councils (WSROC), 2003, *Western Sydney Salinity Code of Practice*.

6.3.1 SOIL SALINITY AS ELECTRICAL CONDUCTIVITY (EC)

Soil salinity at the Site has been assessed with the following definitions from DLWC (2002):

- 'Non-saline': <2 mS/cm;
- 'Slightly saline': 2 – 4 mS/cm;
- 'Moderately saline': 4 – 8 mS/cm;
- 'Very saline': 8 – 16 mS/cm; and,
- 'Highly saline': >16 mS/cm.

6.3.2 CONCRETE AGGRESSIVENESS AND STEEL CORROSIVENESS

Salinity ranges based on saturated extract method (as per Table 5.32 of Hazelton and Murphy, 2007) are presented in Table 6.5. The laboratory reports salinity in units of uS/cm by the 1:5 soil to water method. These values are converted to EC_E (dS/m) by multiplication of an empirical conversion factor, depending on the soil texture, as presented in Table 5.33 of Hazelton and Murphy, 2007. The applied conversion factors and resulting EC_E values for tested samples are provided in Table 2 (Appendix B).

Table 6.5 Exposure classification for concrete piles and plants

RATING	EC_E(DS/M)	EFFECT ON PLANTS[1]	CONCRETE EXPOSURE CLASSIFICATION (AS3600.2009)
Non Saline	<2	Salinity effects are mostly negligible	-
Slightly Saline	2-4	Yields of sensitive crops are affected	-
Moderately Saline	4-8	Yields of many crops are affected	A2
Highly Saline	8-16	Only tolerant crops yield satisfactorily	B1
Extremely Saline	>16	Only very tolerant crops yield satisfactorily	B2

(1) Concrete structures exposed to saline soils shall be constructed in accordance with the minimum compliant cement materials stipulated in AS3600.2009 Table 4.8.2.

Table 6.6 Exposure classification for steel piles

CHLORIDES Cl		pH	SOIL CONDITIONS A[1]	SOIL CONDITIONS B[2]
In Soil %	In Groundwater ppm			
<0.5%	<1,000	>5	Non-aggressive	Non-aggressive
0.5 – 2%	1,000-10,000	4 -5	Mild	Non-aggressive
2 – 5%	10,000-20,000	3 – 4	Moderate	Mild
>5%	>20,000	<3	Severe	Moderate

Notes:

1 Soil conditions A – high permeability soils (e.g. sands and gravels) which are below groundwater.

2 Soil conditions B – low permeability soil (e.g. silts and clays) or soils above groundwater.

6.3.3 EROSION AND DEGRADATION

Soil erosion and degradation risk were assessed by analysis of the Exchangeable Sodium Percentage (ESP) and the Emerson Aggregate Dispersibility Test.

ESP is a measurement of how "sodic" soil is. Sodicity is the level of dominance of the chemistry of the soils by sodium ions. High sodium levels increase the erosion risk of soils as they are prone to dispersion when wet. Sodicity also affects the drainage potential of soils. In extreme cases, sodic soils become so dispersive that they become prone to tunnel erosion. With respect to a salinity assessment, the risk is that sodic soils can form poorly drained areas where salts can accumulate, leading to poor plant stabilisation and hence erosion can become an issue.

The ESP of soil is calculated using the formula:

$$ESP\ (\%) = (Exchangeable\ Na / CEC) \times 100$$

Where CEC = Cation Exchange Capacity

ESP is classified by Hazelton and Murphy (2007) *Interpreting Soil Test Results*, as follows:

- 'Non-sodic': <5% ESP;
- 'Moderately sodic': 5 – 15% ESP; and
- 'Highly sodic': >15% ESP.

7 RESULTS AND DISCUSSION

7.1 SUBSURFACE CONDITIONS

A summary of the subsurface geological profile encountered at the Site is presented in Table 7.1. Test pit and borehole logs are included in Appendix D.

Table 7.1 Subsurface conditions

DEPTH (mBGL)	GENERAL SOIL DESCRIPTION
0.0 to 0.1	Topsoil: Sandy clay, dark brown with fine to coarse sand observed at TP01 only.
0.01 to 2.5	Fill (reworked natural): Silty clay and sandy clay with some concrete observed on the Site surface at TP02 only. The deepest fill was encountered in the vicinity of the former dam and detention basin.
0.1 to 4.6	Silty clay and sandy clay, orange, brown grey with fine to coarse sand.
1.0 to 5.0	Siltstone: Extremely weathered, red, grey, brown.

7.2 FIELD SCREENING

No visual or olfactory indicators of contamination were encountered. PID screening did not indicate the presence of VOCs, with all readings reported at background levels of less than 3 parts per million (ppm).

7.3 SOIL LABORATORY RESULTS

BTEXN, TRH and PAH concentrations in soil samples were below the laboratory limits of reporting (LORs).

All heavy metal concentrations were below the adopted health and ecological criteria.

No asbestos or potentially asbestos-containing material was observed on-site at the surface or during drilling. No asbestos was identified by laboratory analysis.

Tabulated analytical results are provided in Appendix B with laboratory certificates provided in Appendix C.

7.4 SALINITY

Summary tables of the salinity laboratory results are provided in Appendix B. A copy of the laboratory certificates is provided in Appendix C.

7.4.1.1 SOIL SALINITY AS ELECTRICAL CONDUCTIVITY (EC)

When salt dissolves into water it separates into positively and negatively charged ions and increases the conductivity of the water. As such, EC is considered a good indication of salinity in soils. The EC value is obtained by multiplying the laboratory EC (1:5) water extract by the soil texture conversion factor derived from the soil texturing tests. Samples were not tested for soil texture, so were appointed the conversion factor of 8.5 (light clays; heavy clays have a conversion factor of 6) in order to derive the most conservative EC value.

Topsoil was observed in only one location on Site. The majority of the Site was underlain by reworked natural fill which had been placed on the Site surface from the adjacent site.

Subsoil (0.1 – 4.6 mBGL) conductivity ranged from 178 – 550 µS/cm indicating generally non-saline or slightly-saline conditions. One exception was sample TP06_0.3 which had an EC of 550 µS/cm; this is considered 'moderately saline'.

Siltstone (1.0 - 5.0 mBGL) conductivity ranged from 233 – 568 µS/cm indicating generally 'slightly-saline' to 'moderately saline' conditions.

In general, the salinity in the subsoil is low to slightly saline. Salinity is lower in the most elevated north-west portion of the Site (TP01) and greater towards the south-east corner (TP07) which is at a lesser elevation.

7.4.1.2 CONCRETE AGGRESSIVENESS AND STEEL CORROSIVENESS

Sulfate, chloride and pH of soil are analysed to determine the potential for concrete and steel corrosion with respect to a classification of soil condition B (low permeability soils (e.g. silts and clays) or soils above groundwater. Refer to Table 2, Appendix B for soil analytical summary tables.

- Sulfate concentrations ranged from 30 mg/kg to 280 mg/kg, indicating sulfate concentrations which are non-aggressive towards concrete[1];
- Chloride concentrations ranged from 80 mg/kg to 500 mg/kg, indicating chloride concentrations that are non-aggressive towards steel piles[1]; and
- pH levels ranged from 5.1 to 7.8 which shows slightly acidic to neutral soil conditions that have a low to moderate level of aggressiveness towards concrete and non-aggressiveness towards steel piles[1].

NOTE:

[1] Consideration to the type of building materials utilised within the development area should be given and such materials should be suitably designed for the identified ground conditions.

7.4.1.3 EROSION POTENTIAL – EXCHANGABLE SODIUM PERCENTAGE (ESP)

Soil erosion and degradation risk were assessed by ESP.

The findings are as follows:

- CEC levels ranged from 12.4 m_{eq}/100g to 16.1 m_{eq}/100g; this is consistent with the observed clay content of the soils.
- ESP levels were calculated to range from 27.5% to 44.7%. The three samples were collected from each of the lithology types encountered on Site. The three samples tested indicated highly sodic (>15%) soils; these were collected from varying depths downslope from the highest point on Site. This suggests that soils will be prone to erosion if not appropriately stabilised during construction.

8 QA/QC

8.1 DATA QUALITY INDICATORS

The data quality indicators (DQIs) for the soil sampling are presented in Table 8.1 and Table 8.2.

Table 8.1 Field DQI performance

DQI	ITEM	CONFORMANCE
Completeness (a measure of the amount of useable data from a data collection activity)	All critical locations sampled	Yes
	WSP documented procedures which are based on accepted industry standard practices complied with	Yes
	Experienced samplers	Yes
	Correct documentation	Yes
Comparability (the confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event)	Same standard operating procedures (SOPs) used on each occasion	NA
	Experience sampler	Yes
	Climatic conditions (temperature, rainfall, etc.)	NA
	Same type of samples collected	NA
Representativeness (the confidence (expressed qualitatively) that data are representative of each media present on the site)	Appropriate media sampled according to proposal	Yes
	All media identified in proposal sampled	Yes
Precision (a quantitative measure of the variability (or reproducibility) of data)	SOPs appropriate and complied with	Yes
	Duplicate samples analysed	Yes
Accuracy (bias) (a quantitative measure of the closeness of reported data to the true value)	SOPs appropriate and complied with	Yes

Table 8.2 Laboratory DQI performance

DQI	ITEM	CONFORMANCE
Completeness	All critical samples analysed	Yes
	All contaminants of concern analysed	Yes
	Appropriate methods and LORs	Yes
	Sample documentation complete	Yes
	Sample holding times complied with	Yes

DQI	ITEM	CONFORMANCE
Comparability	Sample analytical method used	Yes
	Sample LORs consistent	Yes
	Same units	Yes
Representativeness	All relevant samples analysed	Yes
Precision	Analysis of laboratory duplicates	Yes – results are acceptable
	Analysis of field duplicates	Yes – See Section 8.1.1
Accuracy (bias)	Analysis of rinsate blanks (one per batch)	Yes - results indicate cross-contamination was unlikely, decontamination procedures were adequate
	Analysis of reagent blanks	Yes - Refer to laboratory certificates of analysis
	Analysis of method blanks	
	Analysis of matrix spikes and matrix spikes duplicates	
	Analysis of surrogate spikes and laboratory-prepared spikes	
	Analysis of reference materials/control samples	

8.1.1 FIELD DUPLICATES

The purpose of duplicate samples is to estimate the variability of a given characteristic or contaminant associated with a population. Four duplicate soil samples were collected for analysis; two were analysed as intra-laboratory duplicates, and two as an inter-laboratory duplicate. Duplicate samples were labelled so as to conceal their relationship to the primary sample from the laboratory.

Field duplicate soil samples were collected from soil immediately adjacent to the primary sample by placing approximately equal portions of the primary sample into two sample jars.

The field QA/QC sampling program comprised two blind duplicates sent to the primary laboratory (sample QA01 and QA03) and two sent to the check laboratory (QA01A and QA03A). This conformed to the ratio specified in the NEPM (2013) of 1 in 20 samples for intra-laboratory duplicates and inter-laboratory duplicates for soil analysis.

Relative percentage differences (RPDs) were calculated for the primary and duplicate samples for assessment of the data quality, in particular for assessment of the reproducibility of the analytical data measurements or ‘precision’ given the adopted field and laboratory methods. The RPDs were calculated using the formula below.

$$RPD\% = \frac{|Ro - Rd|}{|(Ro + Rd)/2|} \times 100\%$$

where Ro is the primary sample and Rd is the primary duplicate.

The RPD values were compared to the 30% RPD acceptance criterion outlined in NEPM (2013). RPDs for results less than the laboratory LOR were not calculated. In instances where results were greater than the LOR for the one sample, but below LOR for the corresponding primary or duplicate sample, a result equal to the LOR value was adopted where necessary in order to make a calculation possible. The elevated RPDs in the soil duplicates are attributed to the heterogeneous nature of the sample rather than an error with the labs precision. The potential limitation in the dataset

from the lack of satisfactory inter/intra-laboratory results is considered minimal due to the low concentrations present in the samples and the thorough lab QA/QC involved in each batch. QA/QC results are tabulated in Appendix B.

8.2 SUMMARY OF QA/QC

The sampling methods (including sample preservation, transport and decontamination procedures) and laboratory methods followed during the investigation were consistent with WSP's protocols. It is considered that the data is adequate for the purpose of the study.

9 DISCUSSION AND CONCLUSIONS

9.1 SUMMARY OF SITE CONDITIONS

Based on a review of available background information, the areas of environmental concern and contaminants of potential concern have been identified, as listed in Table 9.1.

Table 9.1 Areas and contaminants of potential concern

POTENTIALLY CONTAMINATING ACTIVITY	POTENTIAL CONTAMINANTS	LIKELY LOCATIONS	POSSIBLE SIGNIFICANCE/RISK
Past filling of the Site	Metals, hydrocarbons, asbestos and volatile organic compounds	The former dam, creek and detention basin locations	**Low:** No concentrations of contaminants of concern were identified above the adopted assessment criteria in these areas.
Historical stockpiling of material on Site	Metals, hydrocarbons, asbestos and volatile organic compounds	Areas of current and former stockpiles	**Low:** No concentrations of contaminants of concern were identified above the adopted assessment criteria in these areas.

9.2 SOIL RESULTS DISCUSSION

Laboratory analytical results indicate that TRH, BTEXN and PAHs were below the laboratory LORs.

Heavy metals were detected across the Site. No soil samples exceeded the adopted limits for the protection of human health or ecological receptors.

No asbestos was detected in any of the soil samples submitted for laboratory analysis and no potential ACM was observed during site works.

Soil at the surface was generally non-saline to moderately saline. The underlying residual clays were predominantly ranked slightly to moderately saline. The deeper weathered siltstone was found to generally be moderately saline. The subsurface in the down gradient south-east corner of the Site was generally more saline than the up gradient north-west.

Soil salinity can impact upon plant growth, suitability of surface water bodies as habitat and affect construction materials and site infrastructure.

Soil testing for ESP indicated that soils on the Site were generally highly sodic. Soil sodicity reduces the ability of colloids to bind together and thus increases the risk of soil erosion.

9.3 CONCLUSIONS

Charter Hall commissioned WSP to undertake a Phase I and II Due Diligence Assessment to assess the contamination in soil, environmental planning and environmental compliance status of the Site and support decision making with regards to a proposed acquisition and redevelopment. WSP understand the proposed redevelopment comprises a warehouse with ancillary offices, loading dock and car parking.

The investigation identified that the Site is underlain by fill comprising reworked natural silty clay and sandy clay to a maximum depth of 2.5 mBGL. The fill was underlain by natural silty clay and sandy clay to a maximum depth of 4.6 mBGL, underlain by extremely weathered siltstone to the maximum investigation depth of 5.0 mBGL.

No contaminants of concern in soil were reported at concentrations above the adopted investigation criteria for commercial/industrial land use.

Surface soils are generally slightly to moderately saline. Salinity on the Site appears to generally increase with depth and in areas of lower elevation. During intrusive investigation no evidence of shallow groundwater (<1m) was observed. Deeper structures (including footings, piles and service trenches) extending into the siltstone lithology should have salinity resistant materials incorporated into their design. Based on the results from this preliminary investigation salinity does not present a significant risk of corrosion to shallow structures. To minimise the impact of the water and salt processes on the development, possible management options may include careful installation of damp-proof courses and good site drainage.

Soils tested on the Site were generally sodic in nature. Sodic soils present an elevated erosion hazard on-site. Development works should be planned to accommodate for the elevated potential for erosion and sediment generation in runoff and the final development should ensure adequate protection of soils (e.g. through maintenance of vegetation coverage).

Further investigations may be warranted if the proposed future land-use scenario changes for the Site.

10 LIMITATIONS

This Report is provided by WSP Australia Pty Limited (WSP) for Charter Hall Holdings Pty Ltd (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated 4 November 2020 and agreement with the Client dated 4 November 2020 (Agreement).

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11 REFERENCES

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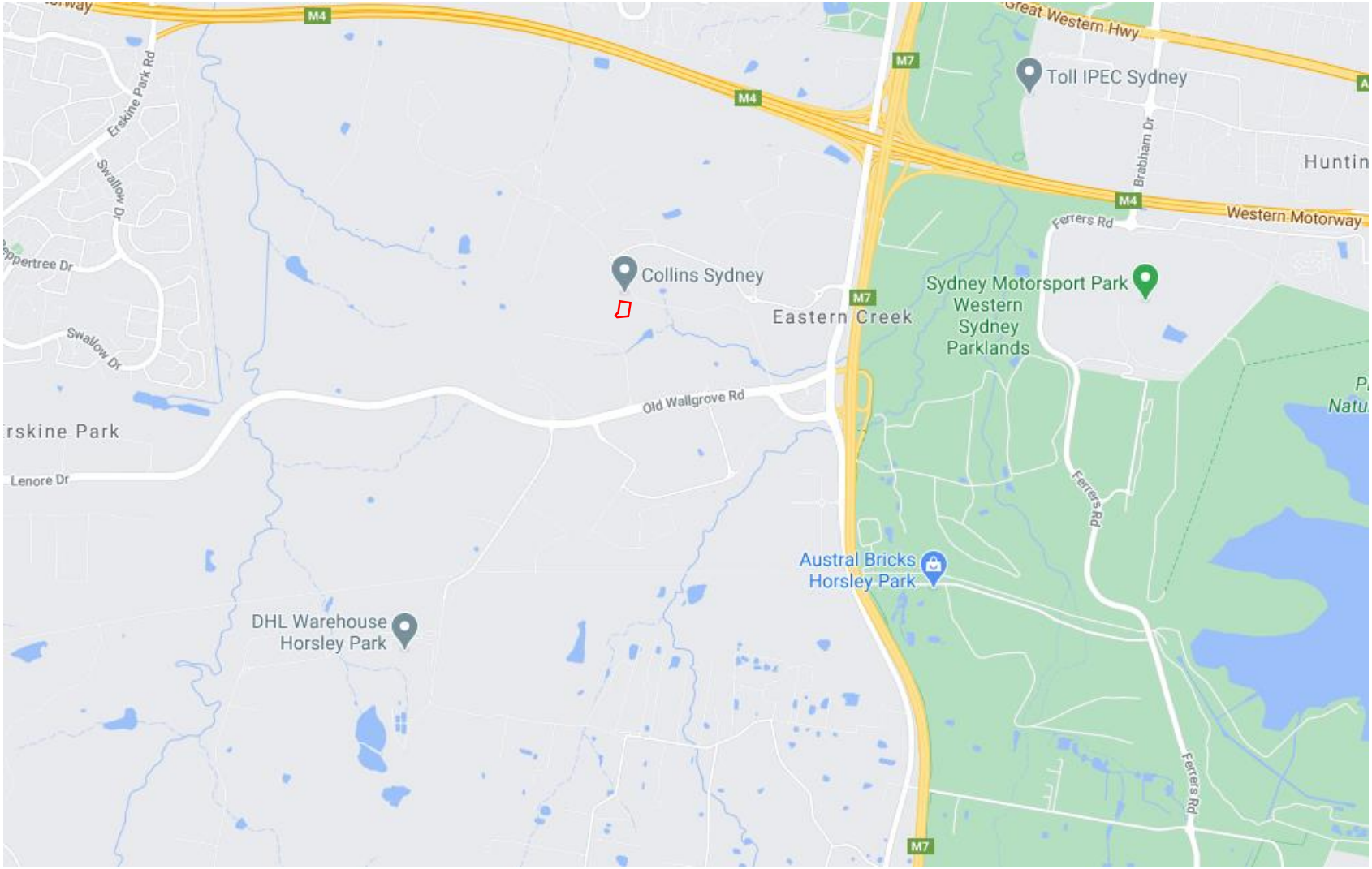
APPENDIX A

SITE FIGURES



Legend

Site boundary

Figure 1 - Site location plan

Site boundary

Approximate stockpile location

Test pit location (Environmental investigation)

Borehole location (Geotechnical investigation)

Figure 2 - Site layout plan and work locations

APPENDIX B

ANALYTICAL RESULTS TABLES

Table 1
Analytical results summary
Eastern Creek
Charter Hall Holdings

		TRH						BTEX						PAH																			Metals							
	Asbestos	C6 - C10	C6 - C10 less BTEX (F1)	C10 - C16	C10 - C16 less Naphthalene (F2)	C16 - C34	C34 - C40	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum)	Pyrene	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL		10	10	50	50	100	100	0.2	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	0.5	0.5	0.5	5	1	2	5	5	0.1	2	5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																														40[#7]	4,000[#8]		3,000[#9]	900	3,600[#10]	240,000	1,500[#11]	730[#12]	6,000	400,000
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																																								
0-1m			260[#13]		NL [#14]			3	NL [#14]	NL [#14]			NL [#14]														NL [#14]													
1-2m			370[#13]		NL [#14]			3	NL [#14]	NL [#14]			NL [#14]														NL [#14]													
2-4m			630 [#14]		NL [#14]			3	NL [#14]	NL [#14]			NL [#14]														NL [#14]													
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil - 0-2 m			215[#15]	170[#16]		1,700	3,300	75	135	165			180					0.7																						
NEPM 2013 Table 1B(4) Generic ACL - Commercial and Industrial																																				1,800				
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																											370						160[#1]		310[#2]	280[#3]	440[#4]		110[#5]	270[#6]
Field ID	**Sample type**	**Date**																																						
BH01_1	**Borehole sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	7	<1	16	45	21	<0.1	14	64
BH02_1	**Borehole sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	14	<1	24	14	31	<0.1	7	25
BH03_0.5	**Borehole sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	8	<1	16	16	12	<0.1	4	15
BH04_0.5	**Borehole sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	9	<1	14	20	19	<0.1	10	66
BH05_0.5	**Borehole sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	6	<1	17	15	12	<0.1	7	23
SP1-1	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	10	<1	29	19	12	<0.1	7	12
SP1-2	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	9	<1	20	15	18	<0.1	7	28
SP1-3	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	9	<1	20	13	15	<0.1	6	18
SP2-1	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	<5	<1	6	5	9	<0.1	3	15
SP2-2	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	<5	<1	5	<5	9	<0.1	3	12
SP2-3	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	<5	<1	10	7	12	<0.1	4	16
SP3-1	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	9	<1	19	14	17	<0.1	7	33
SP4-1	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	9	<1	20	15	18	<0.1	8	28
SP4-2	**Stockpile sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	9	<1	15	18	12	<0.1	12	40
TP01_0.1	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	7	<1	16	10	15	<0.1	6	21
TP02_0.5	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	12	<1	16	37	15	<0.1	20	66
TP03_0.1	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	13	<1	27	19	18	<0.1	9	37
TP04_0.3	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	8	<1	17	15	21	<0.1	7	26
TP05_1.0	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	7	<1	16	16	16	<0.1	8	23
TP06_0.1	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	9	<1	25	20	19	<0.1	8	30
TP07_0.5	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	13	<1	18	19	23	<0.1	6	22
TP08_1.6	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	7	<1	16	20	15	<0.1	10	43
TP09_0.1	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	8	<1	21	16	17	<0.1	7	44
TP10_0.1	**Test pit sample**	**18/11/2020**	ND	<10	<10	<50	<50	<100	<100	<0.2	<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	<0.5	10	<1	23	26	26	<0.1	15	66

Comments
ND - not detected
#1 Aged values apply to arsenic contamination present in soil > 2 years. Refer Schedule B5c for < 2 years.
#2 As Chromium III. Generic ACL value from NEPM 2013 Table 1B(3) using a clay content of 1%. The ACL should be adjusted based on site-specific Clay content (when available). To calculate a site specific EIL, add the ABC to the ACL.
#3 Generic ACL value from NEPM 2013 Table 1B(2) using a soil pH of 4.5. The ACL should be adjusted based on site-specific pH or CEC (when available). To calculate a site specific EIL, add the ABC to the ACL.
#4 Generic ACL value from NEPM 2013 Table 1B(4). To calculate a site specific EIL, add the added background concentration (ABC) to this value.
#5 Generic ACL value from NEPM 2013 Table 1B(3) using a CEC of 5 meq/100g. The ACL should be adjusted based on site-specific CEC (when available). To calculate a site specific EIL, add the added background concentration (ABC) to the ACL.
#6 Generic ACL value from NEPM 2013 Table 1B(1) using a soil pH of 4.0 and a CEC of 5 meq/100g. The ACL should be adjusted based on site-specific pH and CEC (when available). To calculate a site specific EIL, add the ABC to the ACL.
#7 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
#8 Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
#9 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Schedule B7).
#10 As Chromium VI
#11 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
#12 Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
#13 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#14 Derived soil HSL exceeds soil saturation concentraiton
#15 Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#16 Moderate reliability.
#17 -

Table 2
Salinity results summary
Eastern Creek
Charter Hall Holdings

Sample ID	Soil type	Depth (mbgl)	Soil Type	Multiplication Factor	pH	Sulfate	Chloride	EC	EC	EC_e	CEC	Exchangeable Na	ESP
					pH Units	mg/kg	mg/kg	µS/cm	dS/m	dS/m	meq/100g	meq/100g	%
BH01_1	**Sandy clay**	1.0	Light Clay	8.5	-	-	-	-	-	-	14.2	3.9	27.5
BH04_2	**Clay**	2.0	Light Clay	8.5	-	-	-	-	-	-	16.1	7.2	44.7
BH01_4	**Siltstone**	4.0	Light Clay	8.5	-	-	-	-	-	-	12.4	4.6	37.1
TP01_0.1	**Sandy clay**	0.1	Light Clay	8.5	5.9	30	160	-	-	-	-	-	-
TP01_0.3	**Silty sandy clay**	0.3	Light Clay	8.5	5.4	-	-	429	0.429	3.6	-	-	-
TP01_0.6	**Silty sandy clay**	0.6	Light Clay	8.5	5.4	210	500	-	-	-	-	-	-
TP01_1.1	**Siltstone**	1.1	Light Clay	8.5	5.7	-	-	405	0.405	3.4	-	-	-
TP01_1.5	**Siltstone**	1.5	Light Clay	8.5	5.4	-	-	302	0.302	2.6	-	-	-
TP04_0.3	**Silty sandy clay**	0.3	Light Clay	8.5	6.6	30	100	-	-	-	-	-	-
TP04_0.5	**Silty sandy clay**	0.5	Light Clay	8.5	5.5	90	80	-	-	-	-	-	-
TP06_0.3	**Sandy clay**	0.3	Light Clay	8.5	6.0	-	-	550	0.55	4.7	-	-	-
TP06_1.1	**Sandy clay**	1.1	Light Clay	8.5	5.6	-	-	171	0.171	1.5	-	-	-
TP06_3.1	**Siltstone**	3.1	Light Clay	8.5	7.8	-	-	233	0.233	2.0	-	-	-
TP07_0.1	**Silty sandy clay**	0.1	Light Clay	8.5	7.8	120	340	-	-	-	-	-	-
TP07_0.3	**Silty sandy clay**	0.3	Light Clay	8.5	5.8	160	150	178	0.178	1.5	-	-	-
TP07_0.8	**Silty sandy clay**	0.8	Light Clay	8.5	5.1	-	-	389	0.389	3.3	-	-	-
TP07_1.3	**Siltstone**	1.3	Light Clay	8.5	5.2	-	-	568	0.568	4.8	-	-	-
TP07_2.0	**Siltstone**	2.0	Light Clay	8.5	6.5	-	-	480	0.48	4.1	-	-	-
TP10_0.3	**Gravelly clay**	0.3	Light Clay	8.5	5.8	280	450	-	-	-	-	-	-
TP10_0.5	**Silty sandy clay**	0.5	Light Clay	8.5	6.1	160	390	-	-	-	-	-	-

Salinity and sodicity ranking based on NSW DLWC (2002), *Site Investigations for Urban Salinity*

Salinity		Sodicity	
EC_e <2 dS/cm	Non-saline	ESP <5	Non-Sodic
EC_e 2-4 dS/cm	Slightly Saline	ESP 5-15	Sodic
EC_e 4-8 dS/cm	Moderately Saline	ESP >15	Highly Sodic
EC_e 8-16 dS/cm	Very Saline		
EC_e >16 dS/cm	Highly Saline		

Table 3
RPD results
Eastern Creek
Charter Hall Holdings

				TRH				BTEX					PAH																Metals							
				C6 - C10	C10 - C16	C16 - C34	C34 - C40	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				10	50	100	100	0.1	0.1	0.1	0.2	0.1	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	2	0.4	2	5	5	0.1	2	5
Lab Report Number	**Field ID**	**Date**	**Matrix Type**																																	
ES2040974	**TP01_0.1**	**18/11/2020**	**soil**	<10	<50	<100	<100	<0.2	<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	7	<1	16	10	15	<0.1	6	21
	QA03	**18/11/2020**	**soil**	<10	<50	<100	<100	<0.2	<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	7	<1	16	10	14	<0.1	5	15
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	18	**33**
ES2040974	**TP01_0.1**	**18/11/2020**	**soil**	<10	<50	<100	<100	<0.2	<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	7	<1	16	10	15	<0.1	6	21
758324	**QA03A**	**18/11/2020**	**soil**	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<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	8.2	<0.4	20	14	15	<0.1	9.1	32
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	22	**33**	0	0	**41**	**42**
ES2040974	**TP09_0.1**	**18/11/2020**	**soil**	<10	<50	<100	<100	<0.2	<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	8	<1	21	16	17	<0.1	7	44
	QA01	**18/11/2020**	**soil**	<10	<50	<100	<100	<0.2	<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	10	<1	20	17	18	<0.1	7	57
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	5	6	6	0	0	26
ES2040974	**TP09_0.1**	**18/11/2020**	**soil**	<10	<50	<100	<100	<0.2	<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	8	<1	21	16	17	<0.1	7	44
758324	**QA01A**	**18/11/2020**	**soil**	<20	<50	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<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	9.4	<0.4	19	19	18	<0.1	9.4	77
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	10	17	6	0	29	**55**

***RPDs have only been considered where a concentration is greater than 1 times the EQL.**
****Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 30 (1 - 10 x EQL); 50 (10 - 20 x EQL); 50 (> 20 x EQL))**
*****Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory**

Table 4
QC sample results
Eastern Creek
Charter Hall Holdings

		TPH										BTEX															
		C6 - C9		C10 - C14		C15 - C28		C29 - C36		C10 - C36 (Sum)	C10 - C36 (Sum)	Benzene		Toluene		Ethylbenzene		Xylene (m & p)		Xylene (o)		Xylene (Sum)	Xylene (Sum)	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene
		mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L
EQL		10	20	20	50	50	100	50	50	50	50	0.1	1	0.1	2	0.1	2	0.2	2	0.1	2	0.3	2	1	1	1	1
Field ID	**Date**																										
RB1	**18/11/2020**	-	<20	-	<50	-	<100	-	<50	-	<50	-	<1	-	<2	-	<2	-	<2	-	<2	-	<2	<1.0	<1.0	<1.0	<1.0
TB1	**18/11/2020**	<10	-	-	-	-	-	-	-	-	-	<0.2	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	<0.5	-	-	-	-	-

Table 4
QC sample results
Eastern Creek
Charter Hall Holdings

		PAH															Metals								
		Benzo(a) pyrene	Benzo(b&j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene		Phenanthrene	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum)	Pyrene	Arsenic	Cadmium	Chromium	Copper	Lead		Mercury	Nickel	Zinc
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/kg	µg/L	µg/L	µg/L	µg/L
EQL		0.5	1	1	1	1	1	1	1	1	0.5	1	1	0.5	0.5	1	1	0.1	1	1	5	1	0.1	1	5
Field ID	**Date**																								
RB1	**18/11/2020**	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<0.5	<0.5	<1.0	<1	<0.1	<1	<1	-	<1	<0.1	<1	<5
TB1	**18/11/2020**	-	-	-	-	-	-	-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 5
Trip spike sample results
Eastern Creek
Charter Hall Holdings

	Ethylbenzene	Xylene (m & p)	Toluene	Xylene (Sum)	Benzene	Naphthalene	Xylene (o)	Sum of BTEX	C6 - C10	C6 - C9	C6 - C10 less BTEX (F1)
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Trip Spike Result	0.6	3.8	4	5.4	< 0.2	< 1	1.6	10	16	13	< 10
Trip Spike Control	1	6.1	7.3	8.5	< 0.2	< 1	2.4	16.8	26	22	< 10
Spike Recovery %	60	62	55	64	100	100	67	60	62	59	100

APPENDIX C

LABORATORY REPORTS

Updated COC's

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

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☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

☐NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: WSP	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: 680 George St, Sydney		X Non Standard or urgent TAT (List due date): 2 days TAT (delivery on Monday 23/11)	Custody Seal Intact? Yes / No / N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	**COC SEQUENCE NUMBER (Circle)**	Ice Bricks/Frozen Ice packs present upon receipt? Yes / No / N/A
ORDER NUMBER: PS122611		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt °C
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478	OF: 1 2 3 4 5 6 7	Other comment:

SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106	**RELINQUISHED BY:**	**RECEIVED BY:**
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT	*Roderick Zhang*	
Email Reports to (will default to PM if no other addresses are listed): imogen.powell@wsp.com and roderick.zhang@wsp.c		DATE/TIME: 18/11/2020	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):			

RELINQUISHED BY:	**RECEIVED BY:** P.T
DATE/TIME:	DATE/TIME: 19/11/20 5:00pm

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).					Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC	
1	TP01_0.1	18/11/2020	S	Jar and bag		X	X		X		
2	TP01_0.3	18/11/2020	S	Jar and bag						X	
3	TP01_0.6	18/11/2020	S	Jar and bag					X		
4	TP01_1.1	18/11/2020	S	Jar and bag						X	
5	TP01_1.5	18/11/2020	S	Jar and bag						X	
6	TP02_0.1	18/11/2020	S	Jar and bag							
7	TP02_0.3	18/11/2020	S	Jar and bag							
8	TP02_0.5	18/11/2020	S	Jar and bag		X	X				
9	TP02_0.9	18/11/2020	S	Jar and bag							
10	TP02_1.5	18/11/2020	S	Jar and bag							
11	TP03_0.1	18/11/2020	S	Jar and bag		X	X				
12	TP03_0.3	18/11/2020	S	Jar and bag							
				TOTAL							

Environmental Division Sydney
Work Order Reference
ES2040974

Telephone : +61-2-8784 8555

Asbestos / Newcastle

Carbon / Forward Lab / Split WO
Lab / Analysis: QAO1A, QA02A, QA03
Organised By / Date: 19/11/20
Relinquished By / Date:
Connote / Courier:
WO No:
Attach By PO / Internal Sheet:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Updated COC's

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

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☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee mail@alsglobal.com

☐NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

☐TOWNSVILLE 14-16 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: WSP	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle):**	
OFFICE: 680 George St, Sydney	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) X Non Standard or urgent TAT (List due date): 2 days TAT (delivery on Monday 23/11)	Custody Seal Intact?	Yes / No / N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	Free ice/frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER: PS122611		Random Sample Temperature on Receipt	°C
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478	Other comment:	
SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106		
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT		
Email Reports to (will default to PM if no other addresses are listed): imogen.powell@wsp.com and roderick.zhang@wsp.c			
Email Invoice to (will default to PM if no other addresses are listed):			

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Roderick Zhang			P-T
DATE/TIME: 18/11/2020	DATE/TIME:	DATE/TIME:	DATE/TIME: 19/11/20 5:00 pm

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC				Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
13	TP03_0.5	18/11/2020	S	Jar and bag										
14	TP04_0.1	18/11/2020	S	Jar and bag										
15	TP04_0.3	18/11/2020	S	Jar and bag		X	X		X					
16	TP04_0.5	18/11/2020	S	Jar and bag					X					
17	TP05_0.1	18/11/2020	S	Jar and bag										
18	TP05_0.3	18/11/2020	S	Jar and bag										
19	TP05_0.5	18/11/2020	S	Jar and bag										
20	TP05_1.0	18/11/2020	S	Jar and bag		X	X							
21	TP05_1.2	18/11/2020	S	Jar and bag										
22	TP05_1.5	18/11/2020	S	Jar and bag										
23	TP05_1.9	18/11/2020	S	Jar and bag										
24	TP06_0.1	18/11/2020	S	Jar and bag		X	X							
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Updated COC's

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: WSP	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT **(List due date):**	**FOR LABORATORY USE ONLY (Circle)**	
OFFICE: 680 George St, Sydney	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics) X Non Standard or urgent TAT **(List due date):** 2 days TAT (delivery on Monday 23/11)	Custody Seal Intact?	Yes No N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	Frozen/Cold Ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER: PS122611	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7	Random Samples Temperature on Receipt:	°C
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478 OF: 1 2 3 4 5 6 7	Other comment:	
SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106		
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT		
Email Reports to (will default to PM if no other addresses are listed): imogen.powell@wsp.com and roderick.zhang@wsp.co			
Email Invoice to (will default to PM if no other addresses are listed):			

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Roderick Zhang			P. T
DATE/TIME: 18/11/2020	DATE/TIME:	DATE/TIME:	DATE/TIME: 19/11/20 5:00

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC				Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
25	TP06_0.3	18/11/2020	S	Jar and bag						X				
26	TP06_0.5	18/11/2020	S	Jar and bag										
27	TP06_0.8	18/11/2020	S	Jar and bag										
28	TP06_1.1	18/11/2020	S	Jar and bag						X				
29	TP06_1.9	18/11/2020	S	Jar and bag										
30	TP06_2.4	18/11/2020	S	Jar and bag										
31	TP06_3.1	18/11/2020	S	Jar and bag						X				
32	TP07_0.1	18/11/2020	S	Jar and bag					X					
33	TP07_0.3	18/11/2020	S	Jar and bag					X	X				
34	TP07_0.5	18/11/2020	S	Jar and bag		X	X							Please sub sample asbestos from jar if no bag
35	TP07_0.8	18/11/2020	S	Jar and bag						X				
36	TP07_1.1	18/11/2020	S	Jar and bag										
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Updated COC's

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

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CLIENT: WSP	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT **(List due date):**	**FOR LABORATORY USE ONLY (Circle)**	
OFFICE: 680 George St, Sydney	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) X Non Standard or urgent TAT **(List due date):** 2 days TAT **(delivery on Monday 23/11)**	Custody Seal Intact?	Yes No N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	Free ice / frozen ice brick present upon receipt?	Yes No N/A
ORDER NUMBER: PS122611		Random Sample Temperature on Receipt	C
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478	Other comment:	
SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106		
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT		
Email Reports to (will default to PM if no other addresses are listed): **imogen.powell@wsp.com and roderick.zhang@wsp.c**			
Email Invoice to (will default to PM if no other addresses are listed):			

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

RELINQUISHED BY:	**RECEIVED BY:**	**RELINQUISHED BY:**	**RECEIVED BY:**
Roderick Zhang			P T
DATE/TIME: 18/11/2020	DATE/TIME:	DATE/TIME:	DATE/TIME: 19/11/20 5:00

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC				Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
37	TP07_1.3	18/11/2020	S	Jar and bag						X				
38	TP07_2.0	18/11/2020	S	Jar and bag						X				
39	TP08_0.1	18/11/2020	S	Jar and bag										
40	TP08_0.4	18/11/2020	S	Jar and bag										
41	TP08_0.6	18/11/2020	S	Jar and bag										
42	TP08_1.0	18/11/2020	S	Jar and bag										
43	TP08_1.6	18/11/2020	S	Jar and bag		X	X							
44	TP08_2.2	18/11/2020	S	Jar and bag										
45	TP08_2.5	18/11/2020	S	Jar and bag										
46	TP08_2.9	18/11/2020	S	Jar and bag										
47	TP09_0.1	18/11/2020	S	Jar and bag		X	X							
48	TP09_0.3	18/11/2020	S	Jar and bag										
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Updated COC's

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

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☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee.mail@alsglobal.com

☐NEWCASTLE 5/585 Maitland Rd Mayfield West NSW 2304 Ph: 02 4014 2500 E: samples.newcastle@alsglobal.com

☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: WSP	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT **(List due date):**	**FOR LABORATORY USE ONLY (Circle)** Custody Seal Intact? Yes / No / N/A
OFFICE: 680 George St, Sydney		X Non Standard or urgent TAT **(List due date):** 2 days TAT (delivery on Monday 23/11)	Freezer / frozen ice bricks present upon receipt? Yes / No / N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
ORDER NUMBER: PS122611		OF: 1 2 3 4 5 6 7	Other comment:
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478		
SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106	**RELINQUISHED BY:**	**RECEIVED BY:**
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT	*Roderick Zhang*	
Email Reports to (will default to PM if no other addresses are listed): imogen.powell@wsp.com and roderick.zhang@wsp.c		DATE/TIME: 18/11/2020	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):		**RELINQUISHED BY:** DATE/TIME:	**RECEIVED BY:** DATE/TIME: 19/11/20 $5.00

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC				Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
49	TP09_0.5	18/11/2020	S	Jar and bag										
50	TP09_0.6	18/11/2020	S	Jar and bag										
51	TP09_1.0	18/11/2020	S	Jar and bag										
52	TP10_0.1	18/11/2020	S	Jar and bag		X	X							
53	TP10_0.3	18/11/2020	S	Jar and bag					X					
54	TP10_0.5	18/11/2020	S	Jar and bag					X					
55	BH01_0	18/11/2020	S	Jar and bag										
56	BH01_0.5	18/11/2020	S	Jar and bag										
57	BH01-1	18/11/2020	S	Jar and bag		X	X	X						
58	BH01-2	18/11/2020	S	Jar and bag										
59	BH01-3	18/11/2020	S	Jar and bag										
60	BH01-4	18/11/2020	S	Jar and bag				X						
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Updated COC's

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

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☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 024423 2063 E: nowra@alsglobal.com

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: WSP	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**	
OFFICE: 680 George St, Sydney	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) X Non Standard or urgent TAT (List due date): 2 days TAT (delivery on Monday 23/11)	Custody Seal Intact?	Yes No N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	Free Ice / Frozen Ice bricks present upon receipt?	Yes No N/A
ORDER NUMBER: PS122611		Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478	Other comments:	
SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106		
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT		
Email Reports to (will default to PM if no other addresses are listed): imogen.powell@wsp.com and roderick.zhang@wsp.c			
Email Invoice to (will default to PM if no other addresses are listed):			

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Roderick Zhang			P T
DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME: 5:00 pm 19/11/20
18/11/2020			

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC				Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
61	BH01-5	18/11/2020	S	Jar and bag										
62	BH02_0	18/11/2020	S	Jar and bag										
63	BH02_0.5	18/11/2020	S	Jar and bag										
64	BH02_1	18/11/2020	S	Jar and bag		X	X							
65	BH02_2	18/11/2020	S	Jar and bag										
66	BH02_3	18/11/2020	S	Jar and bag										
67	BH02_4	18/11/2020	S	Jar and bag										
68	BH02_5	18/11/2020	S	Jar and bag										
69	BH03_0	18/11/2020	S	Jar and bag										
70	BH03_0.5	18/11/2020	S	Jar and bag		X	X							
71	BH03_1	18/11/2020	S	Jar and bag										
72	BH03_2	18/11/2020	S	Jar and bag										
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Updated COCs

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

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☐PERTH 10 Hod Way Malaga WA 6090 Ph: 08 9209 7655 E: samples.perth@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: WSP	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g. Ultra Trace Organics)	☐ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: 680 George St, Sydney		X Non Standard or urgent TAT (List due date): 2 days TAT (delivery on Monday 23/11)	Custody Seal Intact? Yes No N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	**COC SEQUENCE NUMBER (Circle)**	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: PS122611		COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106	**RELINQUISHED BY:**	**RECEIVED BY:**
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT	*Roderick Zhang*	
Email Reports to (will default to PM if no other addresses are listed): imogen.powell@wsp.com and roderick.zhang@wsp.c		DATE/TIME: 18/11/2020	DATE/TIME:
Email Invoice to (will default to PM if no other addresses are listed):		**RELINQUISHED BY:** DATE/TIME:	**RECEIVED BY:** DATE/TIME: 19/11/20 5:00 PM

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC				Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
73	BH03_3	18/11/2020	S	Jar and bag										
74	BH03_4	18/11/2020	S	Jar and bag										
75	BH03_5	18/11/2020	S	Jar and bag										
76	BH04_0	18/11/2020	S	Jar and bag										
77	BH04_0.5	18/11/2020	S	Jar and bag		X	X							
78	BH04_1	18/11/2020	S	Jar and bag										
79	BH04_2	18/11/2020	S	Jar and bag				X						
80	BH04_3	18/11/2020	S	Jar and bag										
81	BH04_4	18/11/2020	S	Jar and bag										
82	BH04_5	18/11/2020	S	Jar and bag										
83	BH05_0	18/11/2020	S	Jar and bag										
84	BH05_0.5	18/11/2020	S	Jar and bag		X	X							
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Updated COC's

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: WSP	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**	
OFFICE: 680 George St, Sydney	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) X Non Standard or urgent TAT (List due date): 2 days TAT (delivery on Monday 23/11)	Custody Seal Intact?	Yes / No / N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	Presence of Ice/Frozen ice bricks present upon receipt?	Yes / No / N/A
ORDER NUMBER: PS122611		Random Sample Temperature on Receipt:	°C
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478	Other comment:	
SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106		
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT		
Email Reports to (will default to PM if no other addresses are listed): imogen.powell@wsp.com and roderick.zhang@wsp.c			
Email Invoice to (will default to PM if no other addresses are listed):			

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Roderick Zhang			PM
DATE/TIME: 18/11/2020	DATE/TIME:	DATE/TIME:	DATE/TIME: 19/11/20 J.CV

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC				Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
85	BH05_1	18/11/2020	S	Jar and bag										
86	BH05_2	18/11/2020	S	Jar and bag										
		18/11/2020	S	Jar and bag										
		18/11/2020	S	Jar and bag										
89	QA01	18/11/2020	S	Jar and bag		X								
	QA01A	18/11/2020	S	Jar and bag										Please send to Eurofins for TRH, BTEX, PAH and metals
90	SP1-1	18/11/2020	S	Jar and bag		X	X							
91	SP1-2	18/11/2020	S	Jar and bag		X	X							
92	SP1-3	18/11/2020	S	Jar and bag		X	X							
93	SP2-1	18/11/2020	S	Jar and bag		X	X							
94	SP2-2	18/11/2020	S	Jar and bag		X	X							
95	SP2-3	18/11/2020	S	Jar and bag		X	X							
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

Updated COC's

CHAIN OF CUSTODY

ALS Environmental

ALS Laboratory: please tick →

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: portkembla@alsglobal.com

CLIENT: WSP	**TURNAROUND REQUIREMENTS :** ☐ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: 680 George St, Sydney	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) X Non Standard or urgent TAT (List due date): **2 days TAT (delivery on Monday 23/11)**	Custody Seal Intact? Yes No N/A
PROJECT: Eastern Creek	**ALS QUOTE NO.:** EN/008/20	Free ice / frozen ice bricks present upon receipt? Yes No N/A
ORDER NUMBER: PS122611		Random Sample Temperature on Receipt °C
PROJECT MANAGER: Imogen Powell	**CONTACT PH:** 02 9272 1478	Other comment:
SAMPLER: Roderick Zhang	**SAMPLER MOBILE:** 0433 399 106	
COC emailed to ALS? (YES)	**EDD FORMAT (or default):** ESDAT	
Email Reports to (will default to PM if no other addresses are listed): imogen.powell@wsp.com and roderick.zhang@wsp.c		
Email Invoice to (will default to PM if no other addresses are listed):		

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Roderick Zhang			
DATE/TIME: 18/11/2020	DATE/TIME:	DATE/TIME:	DATE/TIME: 19/11/20

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION		ANALYSIS REQUIRED Including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL CONTAINERS	S26	Asbestos P/A	CEC	Corr 7	pH and EC	TRH/BTEXN			Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
96	SP3-1	18/11/2020	S	Jar and bag		X	X							
97	SP4-1	18/11/2020	S	Jar and bag		X	X							
98	SP4-2	18/11/2020	S	Jar and bag		X	X							
99	RB1	18/11/2020	S	Amber bottles, 2 vials and plastic		X								
100	TS1	18/11/2020	S	2 vials							X			
101	TB1	18/11/2020	S	2 vials							X			
102	QA02	18/11/2020	S	Jar and bag										
	QA02A	18/11/2020	S	Jar and bag										Send to Eurofins no analysis
103	QA03	18/11/2020	S	Jar and bag		X								
	QA03A	18/11/2020	S	Jar and bag										Please send to Eurofins for TRH, BTEX, PAH and metals
104	TSC1	18/11/2020	S	Jar and bag										
		18/11/2020	S	Jar and bag										
				TOTAL										

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2040974**

Client	: **WSP Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: MS IMOGEN POWELL	Contact	: Grace White
Address	: GPO BOX 5394 SYDNEY NSW, AUSTRALIA 2001	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: Imogen.Powell@wsp.com	E-mail	: Grace.White@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: EASTERN CREEK	Page	: 1 of 5
Order number	: PS122611	Quote number	: ES2020PARBRINSW0007 (EN/008/20)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Roderick Zhang		

Dates

Date Samples Received	: 19-Nov-2020 09:49	Issue Date	: 19-Nov-2020
Client Requested Due Date	: 23-Nov-2020	Scheduled Reporting Date	: **23-Nov-2020**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Intact.
No. of coolers/boxes	: 5	Temperature	: 5.4'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 102 / 47

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample QA01A, QA02A and QA03A to be forwarded to Eurofins as per COC's.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- **EA200: As only one sample container was submitted for multiple tests for sample TP07_0.5 and BH01-1, at the client's request, sub sampling was conducted prior to Asbestos analysis. As this has the potential to understate detection, results should be scrutinised accordingly.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) SOIL No analysis requested	SOIL - Corr. Sched 7 (SYDNEY) Soil on Concrete & Steel Piles (AS2159-1995)	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EA200G Asbestos Identification in Soils -	SOIL - IN-4S pH plus EC (1:5)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2040974-001	18-Nov-2020 00:00	TP01_0.1		✓	✓	✓			✓
ES2040974-002	18-Nov-2020 00:00	TP01_0.3						✓	
ES2040974-003	18-Nov-2020 00:00	TP01_0.6		✓	✓				
ES2040974-004	18-Nov-2020 00:00	TP01_1.1						✓	
ES2040974-005	18-Nov-2020 00:00	TP01_1.5						✓	
ES2040974-006	18-Nov-2020 00:00	TP02_0.1	✓						
ES2040974-007	18-Nov-2020 00:00	TP02_0.3	✓						
ES2040974-008	18-Nov-2020 00:00	TP02_0.5			✓	✓			✓
ES2040974-009	18-Nov-2020 00:00	TP02_0.9	✓						
ES2040974-010	18-Nov-2020 00:00	TP02_1.5	✓						
ES2040974-011	18-Nov-2020 00:00	TP03_0.1			✓	✓			✓
ES2040974-012	18-Nov-2020 00:00	TP03_0.3	✓						
ES2040974-013	18-Nov-2020 00:00	TP03_0.5	✓						
ES2040974-014	18-Nov-2020 00:00	TP04_0.1	✓						
ES2040974-015	18-Nov-2020 00:00	TP04_0.3		✓	✓	✓			✓
ES2040974-016	18-Nov-2020 00:00	TP04_0.5		✓	✓				
ES2040974-017	18-Nov-2020 00:00	TP05_0.1	✓						
ES2040974-018	18-Nov-2020 00:00	TP05_0.3	✓						
ES2040974-019	18-Nov-2020 00:00	TP05_0.5	✓						
ES2040974-020	18-Nov-2020 00:00	TP05_1.0			✓	✓			✓
ES2040974-021	18-Nov-2020 00:00	TP05_1.2	✓						
ES2040974-022	18-Nov-2020 00:00	TP05_1.5	✓						
ES2040974-023	18-Nov-2020 00:00	TP05_1.9	✓						
ES2040974-024	18-Nov-2020 00:00	TP06_0.1			✓	✓			✓
ES2040974-025	18-Nov-2020 00:00	TP06_0.3						✓	
ES2040974-026	18-Nov-2020 00:00	TP06_0.5	✓						
ES2040974-027	18-Nov-2020 00:00	TP06_0.8	✓						
ES2040974-028	18-Nov-2020 00:00	TP06_1.1						✓	
ES2040974-029	18-Nov-2020 00:00	TP06_1.9	✓						
ES2040974-030	18-Nov-2020 00:00	TP06_2.4	✓						
ES2040974-031	18-Nov-2020 00:00	TP06_3.1						✓	
ES2040974-032	18-Nov-2020 00:00	TP07_0.1		✓	✓				
ES2040974-033	18-Nov-2020 00:00	TP07_0.3		✓	✓			✓	
ES2040974-034	18-Nov-2020 00:00	TP07_0.5			✓		✓		✓
ES2040974-035	18-Nov-2020 00:00	TP07_0.8						✓	

			(On Hold) SOIL No analysis requested	SOIL - Corr. Sched 7 (SYDNEY) Soil on Concrete & Steel Piles (AS2159-1995)	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EA200G Asbestos Identification in Soils -	SOIL - IN-4S pH plus EC (1:5)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2040974-036	18-Nov-2020 00:00	TP07_1.1	✓						
ES2040974-037	18-Nov-2020 00:00	TP07_1.3						✓	
ES2040974-038	18-Nov-2020 00:00	TP07_2.0						✓	
ES2040974-039	18-Nov-2020 00:00	TP08_0.1	✓						
ES2040974-040	18-Nov-2020 00:00	TP08_0.4	✓						
ES2040974-041	18-Nov-2020 00:00	TP08_0.6	✓						
ES2040974-042	18-Nov-2020 00:00	TP08_1.0	✓						
ES2040974-043	18-Nov-2020 00:00	TP08_1.6			✓	✓			✓
ES2040974-044	18-Nov-2020 00:00	TP08_2.2	✓						
ES2040974-045	18-Nov-2020 00:00	TP08_2.5	✓						
ES2040974-046	18-Nov-2020 00:00	TP08_2.9	✓						
ES2040974-047	18-Nov-2020 00:00	TP09_0.1			✓	✓			✓
ES2040974-048	18-Nov-2020 00:00	TP09_0.3	✓						
ES2040974-049	18-Nov-2020 00:00	TP09_0.5	✓						
ES2040974-050	18-Nov-2020 00:00	TP09_0.6	✓						
ES2040974-051	18-Nov-2020 00:00	TP09_1.0	✓						
ES2040974-052	18-Nov-2020 00:00	TP10_0.1			✓	✓			✓
ES2040974-053	18-Nov-2020 00:00	TP10_0.3		✓	✓				
ES2040974-054	18-Nov-2020 00:00	TP10_0.5		✓	✓				
ES2040974-055	18-Nov-2020 00:00	BH01_0	✓						
ES2040974-056	18-Nov-2020 00:00	BH01_0.5	✓						
ES2040974-057	18-Nov-2020 00:00	BH01_1			✓		✓		✓
ES2040974-058	18-Nov-2020 00:00	BH01_2	✓						
ES2040974-059	18-Nov-2020 00:00	BH01_3	✓						
ES2040974-061	18-Nov-2020 00:00	BH01_5	✓						
ES2040974-062	18-Nov-2020 00:00	BH02_0	✓						
ES2040974-063	18-Nov-2020 00:00	BH02_0.5	✓						
ES2040974-064	18-Nov-2020 00:00	BH02_1			✓	✓			✓
ES2040974-065	18-Nov-2020 00:00	BH02_2	✓						
ES2040974-066	18-Nov-2020 00:00	BH02_3	✓						
ES2040974-067	18-Nov-2020 00:00	BH02_4	✓						
ES2040974-068	18-Nov-2020 00:00	BH02_5	✓						
ES2040974-069	18-Nov-2020 00:00	BH03_0	✓						
ES2040974-070	18-Nov-2020 00:00	BH03_0.5			✓	✓			✓
ES2040974-071	18-Nov-2020 00:00	BH03_1	✓						
ES2040974-072	18-Nov-2020 00:00	BH03_2	✓						
ES2040974-073	18-Nov-2020 00:00	BH03_3	✓						
ES2040974-074	18-Nov-2020 00:00	BH03_4	✓						
ES2040974-075	18-Nov-2020 00:00	BH03_5	✓						
ES2040974-076	18-Nov-2020 00:00	BH04_0	✓						
ES2040974-077	18-Nov-2020 00:00	BH04_0.5			✓	✓			✓

			(On Hold) SOIL No analysis requested	SOIL - Corr. Sched 7 (SYDNEY) Soil on Concrete & Steel Piles (AS2159-1995)	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EA200G Asbestos Identification in Soils -	SOIL - IN-4S pH plus EC (1:5)	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2040974-078	18-Nov-2020 00:00	BH04_1	✓						
ES2040974-080	18-Nov-2020 00:00	BH04_3	✓						
ES2040974-081	18-Nov-2020 00:00	BH04_4	✓						
ES2040974-082	18-Nov-2020 00:00	BH04_5	✓						
ES2040974-083	18-Nov-2020 00:00	BH05_0	✓						
ES2040974-084	18-Nov-2020 00:00	BH05_0.5			✓	✓			✓
ES2040974-085	18-Nov-2020 00:00	BH05_1	✓						
ES2040974-086	18-Nov-2020 00:00	BH05_2	✓						
ES2040974-089	18-Nov-2020 00:00	QA01			✓				✓
ES2040974-090	18-Nov-2020 00:00	SP1-1			✓	✓			✓
ES2040974-091	18-Nov-2020 00:00	SP1-2			✓	✓			✓
ES2040974-092	18-Nov-2020 00:00	SP1-3			✓	✓			✓
ES2040974-093	18-Nov-2020 00:00	SP2-1			✓	✓			✓
ES2040974-094	18-Nov-2020 00:00	SP2-2			✓	✓			✓
ES2040974-095	18-Nov-2020 00:00	SP2-3			✓	✓			✓
ES2040974-096	18-Nov-2020 00:00	SP3-1			✓	✓			✓
ES2040974-097	18-Nov-2020 00:00	SP4-1			✓	✓			✓
ES2040974-098	18-Nov-2020 00:00	SP4-2			✓	✓			✓
ES2040974-102	18-Nov-2020 00:00	QA02	✓						
ES2040974-103	18-Nov-2020 00:00	QA03			✓				✓

Matrix: **SOIL**

Laboratory sample ID	*Client sampling date / time*	*Client sample ID*	SOIL - ED008 Def Exchangeable Cations with pre-treatment -	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs
ES2040974-057	18-Nov-2020 00:00	BH01_1	✓	
ES2040974-060	18-Nov-2020 00:00	BH01_4	✓	
ES2040974-079	18-Nov-2020 00:00	BH04_2	✓	
ES2040974-100	18-Nov-2020 00:00	TS1		✓
ES2040974-101	18-Nov-2020 00:00	TB1		✓
ES2040974-104	18-Nov-2020 00:00	TSC1		✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - W-26T TRH/BTEXN/PAH/Total 8 Metals
ES2040974-099	18-Nov-2020 00:00	RB1	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AU.AccountsPayable@wsp.com

IMOGEN POWELL

- *AU Certificate of Analysis - NATA (COA)	Email	Imogen.Powell@wsp.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Imogen.Powell@wsp.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Imogen.Powell@wsp.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Imogen.Powell@wsp.com
- A4 - AU Tax Invoice (INV)	Email	Imogen.Powell@wsp.com
- Chain of Custody (CoC) (COC)	Email	Imogen.Powell@wsp.com
- EDI Format - ENMRG (ENMRG)	Email	Imogen.Powell@wsp.com
- EDI Format - ESDAT (ESDAT)	Email	Imogen.Powell@wsp.com

Roderick Zhang

- *AU Certificate of Analysis - NATA (COA)	Email	roderick.zhang@wsp.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	roderick.zhang@wsp.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	roderick.zhang@wsp.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	roderick.zhang@wsp.com
- A4 - AU Tax Invoice (INV)	Email	roderick.zhang@wsp.com
- Chain of Custody (CoC) (COC)	Email	roderick.zhang@wsp.com
- EDI Format - ENMRG (ENMRG)	Email	roderick.zhang@wsp.com
- EDI Format - ESDAT (ESDAT)	Email	roderick.zhang@wsp.com

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2040974**	Page	: 1 of 35
Client	: **WSP Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: MS IMOGEN POWELL	Contact	: Grace White
Address	: GPO BOX 5394 SYDNEY NSW, AUSTRALIA 2001	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: EASTERN CREEK	Date Samples Received	: 19-Nov-2020 09:49
Order number	: PS122611	Date Analysis Commenced	: 20-Nov-2020
C-O-C number	: ----	Issue Date	: 24-Nov-2020 08:55
Sampler	: Roderick Zhang		
Site	: ----		
Quote number	: EN/008/20		
No. of samples received	: 102		
No. of samples analysed	: 47		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

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

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

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

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

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

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

- ALS is not NATA accredited for the analysis of Exchangeable Cations on Alkaline Soils when performed under ALS Method ED006.
- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- **EA200: As only one sample container was submitted for multiple tests for sample TP07_0.5 and BH01-1, at the client's request, sub sampling was conducted prior to Asbestos analysis. As this has the potential to understate detection, results should be scrutinised accordingly.**
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- ED007 and ED008: When Exchangeable Al is reported from these methods, it should be noted that Rayment & Lyons (2011) suggests Exchange Acidity by 1M KCl - Method 15G1 (ED005) is a more suitable method for the determination of exchange acidity (H+ + Al3+).
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.

- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP01_0.1	TP01_0.3	TP01_0.6	TP01_1.1	TP01_1.5
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-001	ES2040974-002	ES2040974-003	ES2040974-004	ES2040974-005
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	5.9	5.4	5.4	5.7	5.4
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	429	----	405	302
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.5	----	17.0	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	----	----	----
Asbestos Type	1332-21-4	-	--	-	----	----	----	----
Sample weight (dry)	----	0.01	g	47.5	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	----	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	----	----	----	----
Organic Fibre	----	0.1	g/kg	No	----	----	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	30	----	210	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	160	----	500	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	16	----	----	----	----
Copper	7440-50-8	5	mg/kg	10	----	----	----	----
Lead	7439-92-1	5	mg/kg	15	----	----	----	----
Nickel	7440-02-0	2	mg/kg	6	----	----	----	----
Zinc	7440-66-6	5	mg/kg	21	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP01_0.1	TP01_0.3	TP01_0.6	TP01_1.1	TP01_1.5
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-001	ES2040974-002	ES2040974-003	ES2040974-004	ES2040974-005
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP01_0.1	TP01_0.3	TP01_0.6	TP01_1.1	TP01_1.5
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-001	ES2040974-002	ES2040974-003	ES2040974-004	ES2040974-005
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		101	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		101	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		79.1	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		99.4	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		108	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		100	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		93.8	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		100	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		123	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP02_0.5	TP03_0.1	TP04_0.3	TP04_0.5	TP05_1.0
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-008	ES2040974-011	ES2040974-015	ES2040974-016	ES2040974-020
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	----	----	6.6	5.5	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.6	15.6	20.6	17.7	14.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	----	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	----	No
Asbestos Type	1332-21-4	-	--	-	-	-	----	-
Sample weight (dry)	----	0.01	g	69.2	144	93.5	----	46.8
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	----	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	----	No
Organic Fibre	----	0.1	g/kg	No	No	No	----	No
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	30	90	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	100	80	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	12	13	8	----	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	<1
Chromium	7440-47-3	2	mg/kg	16	27	17	----	16
Copper	7440-50-8	5	mg/kg	37	19	15	----	16
Lead	7439-92-1	5	mg/kg	15	18	21	----	16
Nickel	7440-02-0	2	mg/kg	20	9	7	----	8
Zinc	7440-66-6	5	mg/kg	66	37	26	----	23
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP02_0.5	TP03_0.1	TP04_0.3	TP04_0.5	TP05_1.0
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-008	ES2040974-011	ES2040974-015	ES2040974-016	ES2040974-020
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	----	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	----	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	----	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	----	<0.2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP02_0.5	TP03_0.1	TP04_0.3	TP04_0.5	TP05_1.0
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-008	ES2040974-011	ES2040974-015	ES2040974-016	ES2040974-020
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	<1
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**95.4**	**102**	**96.2**	----	**101**
2-Chlorophenol-D4	93951-73-6	0.5	%	**102**	**95.7**	**96.8**	----	**102**
2.4.6-Tribromophenol	118-79-6	0.5	%	**75.4**	**73.3**	**70.7**	----	**74.9**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**96.2**	**96.4**	**96.6**	----	**100**
Anthracene-d10	1719-06-8	0.5	%	**100**	**111**	**101**	----	**102**
4-Terphenyl-d14	1718-51-0	0.5	%	**101**	**106**	**105**	----	**110**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**92.2**	**88.7**	**87.5**	----	**86.6**
Toluene-D8	2037-26-5	0.2	%	**102**	**102**	**97.8**	----	**103**
4-Bromofluorobenzene	460-00-4	0.2	%	**125**	**120**	**110**	----	**112**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP06_0.1	TP06_0.3	TP06_1.1	TP06_3.1	TP07_0.1
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-024	ES2040974-025	ES2040974-028	ES2040974-031	ES2040974-032
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	----	6.0	5.6	7.8	7.8
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	----	550	171	233	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	9.6	----	----	----	5.1
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	----	----	----
Asbestos Type	1332-21-4	-	--	-	----	----	----	----
Sample weight (dry)	----	0.01	g	135	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	----	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	----	----	----	----
Organic Fibre	----	0.1	g/kg	No	----	----	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	----	120
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	----	340
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	25	----	----	----	----
Copper	7440-50-8	5	mg/kg	20	----	----	----	----
Lead	7439-92-1	5	mg/kg	19	----	----	----	----
Nickel	7440-02-0	2	mg/kg	8	----	----	----	----
Zinc	7440-66-6	5	mg/kg	30	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06_0.1	TP06_0.3	TP06_1.1	TP06_3.1	TP07_0.1
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-024	ES2040974-025	ES2040974-028	ES2040974-031	ES2040974-032
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP06_0.1	TP06_0.3	TP06_1.1	TP06_3.1	TP07_0.1
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-024	ES2040974-025	ES2040974-028	ES2040974-031	ES2040974-032
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**93.5**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**96.8**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**72.6**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**102**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**104**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**101**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**92.3**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**106**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**120**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP07_0.3	TP07_0.5	TP07_0.8	TP07_1.3	TP07_2.0
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-033	ES2040974-034	ES2040974-035	ES2040974-037	ES2040974-038
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	5.8	----	5.1	5.2	6.5
EA010: Conductivity (1:5)								
Electrical Conductivity @ 25°C	----	1	µS/cm	178	----	389	568	480
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	17.5	13.0	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	----	----	----
Asbestos Type	1332-21-4	-	--	----	-	----	----	----
Sample weight (dry)	----	0.01	g	----	39.7	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	A. SMYLIE	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	----	No	----	----	----
Organic Fibre	----	0.1	g/kg	----	No	----	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	160	----	----	----	----
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	150	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	13	----	----	----
Cadmium	7440-43-9	1	mg/kg	----	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	----	18	----	----	----
Copper	7440-50-8	5	mg/kg	----	19	----	----	----
Lead	7439-92-1	5	mg/kg	----	23	----	----	----
Nickel	7440-02-0	2	mg/kg	----	6	----	----	----
Zinc	7440-66-6	5	mg/kg	----	22	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP07_0.3	TP07_0.5	TP07_0.8	TP07_1.3	TP07_2.0
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-033	ES2040974-034	ES2040974-035	ES2040974-037	ES2040974-038
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	----	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	----	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	----	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	----	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	----	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	----	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	----	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	----	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	----	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	----	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	----	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	----	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	----	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	----	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg	----	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	----	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	----	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	----	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	----	<10	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	----	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	----	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	----	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	----	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	----	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	----	<50	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	----	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg	----	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	----	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	----	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP07_0.3	TP07_0.5	TP07_0.8	TP07_1.3	TP07_2.0
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-033	ES2040974-034	ES2040974-035	ES2040974-037	ES2040974-038
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
ortho-Xylene	95-47-6	0.5	mg/kg	----	<0.5	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	----	<0.2	----	----	----
^ Total Xylenes	----	0.5	mg/kg	----	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg	----	<1	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	----	**95.0**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	----	**98.2**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	----	**69.7**	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	----	**101**	----	----	----
Anthracene-d10	1719-06-8	0.5	%	----	**102**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	----	**103**	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	----	**89.5**	----	----	----
Toluene-D8	2037-26-5	0.2	%	----	**102**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	----	**116**	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP08_1.6	TP09_0.1	TP10_0.1	TP10_0.3	TP10_0.5
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-043	ES2040974-047	ES2040974-052	ES2040974-053	ES2040974-054
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	5.8	6.1
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	10.2	2.5	8.4	15.8	14.1
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	----	----
Asbestos Type	1332-21-4	-	--	-	-	-	----	----
Sample weight (dry)	----	0.01	g	127	103	232	----	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	----	----
Organic Fibre	----	0.1	g/kg	No	No	No	----	----
ED040S : Soluble Sulfate by ICPAES								
Sulfate as SO4 2-	14808-79-8	10	mg/kg	----	----	----	280	160
ED045G: Chloride by Discrete Analyser								
Chloride	16887-00-6	10	mg/kg	----	----	----	450	390
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	8	10	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	16	21	23	----	----
Copper	7440-50-8	5	mg/kg	20	16	26	----	----
Lead	7439-92-1	5	mg/kg	15	17	26	----	----
Nickel	7440-02-0	2	mg/kg	10	7	15	----	----
Zinc	7440-66-6	5	mg/kg	43	44	66	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	TP08_1.6	TP09_0.1	TP10_0.1	TP10_0.3	TP10_0.5
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-043	ES2040974-047	ES2040974-052	ES2040974-053	ES2040974-054
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TP08_1.6	TP09_0.1	TP10_0.1	TP10_0.3	TP10_0.5
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-043	ES2040974-047	ES2040974-052	ES2040974-053	ES2040974-054
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**104**	**100**	**93.0**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**104**	**105**	**95.8**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**78.5**	**82.2**	**78.4**	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**97.2**	**104**	**92.9**	----	----
Anthracene-d10	1719-06-8	0.5	%	**102**	**108**	**108**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**104**	**105**	**108**	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**96.6**	**96.3**	**92.8**	----	----
Toluene-D8	2037-26-5	0.2	%	**109**	**111**	**106**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**120**	**126**	**117**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_1	BH01_4	BH02_1	BH03_0.5	BH04_0.5
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-057	ES2040974-060	ES2040974-064	ES2040974-070	ES2040974-077
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.1	----	15.8	16.5	17.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	----	No	No	No
Asbestos Type	1332-21-4	-	--	-	----	-	-	-
Sample weight (dry)	----	0.01	g	21.5	----	459	414	466
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	----	A. SMYLIE	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	No	----	No	No	No
Organic Fibre	----	0.1	g/kg	No	----	No	No	No
ED006: Exchangeable Cations on Alkaline Soils								
Exchangeable Calcium	----	0.2	meq/100g	----	1.5	----	----	----
Exchangeable Magnesium	----	0.2	meq/100g	----	6.1	----	----	----
Exchangeable Potassium	----	0.2	meq/100g	----	<0.2	----	----	----
Exchangeable Sodium	----	0.2	meq/100g	----	4.6	----	----	----
Cation Exchange Capacity	----	0.2	meq/100g	----	12.4	----	----	----
Exchangeable Sodium Percent	----	0.2	%	----	37.4	----	----	----
ED007: Exchangeable Cations								
Exchangeable Calcium	----	0.1	meq/100g	0.8	----	----	----	----
Exchangeable Magnesium	----	0.1	meq/100g	9.2	----	----	----	----
Exchangeable Potassium	----	0.1	meq/100g	0.2	----	----	----	----
Exchangeable Sodium	----	0.1	meq/100g	3.9	----	----	----	----
Cation Exchange Capacity	----	0.1	meq/100g	14.2	----	----	----	----
Exchangeable Sodium Percent	----	0.1	%	27.7	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	----	14	8	9
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	----	24	16	14
Copper	7440-50-8	5	mg/kg	45	----	14	16	20
Lead	7439-92-1	5	mg/kg	21	----	31	12	19
Nickel	7440-02-0	2	mg/kg	14	----	7	4	10
Zinc	7440-66-6	5	mg/kg	64	----	25	15	66
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01_1	BH01_4	BH02_1	BH03_0.5	BH04_0.5
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-057	ES2040974-060	ES2040974-064	ES2040974-070	ES2040974-077
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	----	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	----	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	----	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_1	BH01_4	BH02_1	BH03_0.5	BH04_0.5
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-057	ES2040974-060	ES2040974-064	ES2040974-070	ES2040974-077
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**102**	----	**105**	**104**	**95.2**
2-Chlorophenol-D4	93951-73-6	0.5	%	**98.6**	----	**95.9**	**100**	**103**
2.4.6-Tribromophenol	118-79-6	0.5	%	**74.9**	----	**69.8**	**57.9**	**73.6**
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**96.2**	----	**101**	**99.0**	**97.2**
Anthracene-d10	1719-06-8	0.5	%	**101**	----	**106**	**98.3**	**106**
4-Terphenyl-d14	1718-51-0	0.5	%	**103**	----	**107**	**111**	**101**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**88.2**	----	**86.2**	**93.0**	**87.0**
Toluene-D8	2037-26-5	0.2	%	**99.7**	----	**101**	**105**	**100**
4-Bromofluorobenzene	460-00-4	0.2	%	**114**	----	**110**	**117**	**109**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH04_2	BH05_0.5	QA01	SP1-1	SP1-2
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-079	ES2040974-084	ES2040974-089	ES2040974-090	ES2040974-091
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	----	18.4	4.6	10.7	1.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	----	No	No
Asbestos Type	1332-21-4	-	--	----	-	----	-	-
Sample weight (dry)	----	0.01	g	----	362	----	46.2	80.5
APPROVED IDENTIFIER:	----	-	--	----	A. SMYLIE	----	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	----	No	----	No	No
Organic Fibre	----	0.1	g/kg	----	No	----	No	No
ED006: Exchangeable Cations on Alkaline Soils								
Exchangeable Calcium	----	0.2	meq/100g	1.1	----	----	----	----
Exchangeable Magnesium	----	0.2	meq/100g	7.9	----	----	----	----
Exchangeable Potassium	----	0.2	meq/100g	<0.2	----	----	----	----
Exchangeable Sodium	----	0.2	meq/100g	7.2	----	----	----	----
Cation Exchange Capacity	----	0.2	meq/100g	16.1	----	----	----	----
Exchangeable Sodium Percent	----	0.2	%	44.4	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	----	6	10	10	9
Cadmium	7440-43-9	1	mg/kg	----	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	----	17	20	29	20
Copper	7440-50-8	5	mg/kg	----	15	17	19	15
Lead	7439-92-1	5	mg/kg	----	12	18	12	18
Nickel	7440-02-0	2	mg/kg	----	7	7	7	7
Zinc	7440-66-6	5	mg/kg	----	23	57	12	28
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	----	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_2	BH05_0.5	QA01	SP1-1	SP1-2
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-079	ES2040974-084	ES2040974-089	ES2040974-090	ES2040974-091
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_2	BH05_0.5	QA01	SP1-1	SP1-2
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-079	ES2040974-084	ES2040974-089	ES2040974-090	ES2040974-091
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	97.1	99.4	100	99.5
2-Chlorophenol-D4	93951-73-6	0.5	%		----	94.6	101	104	99.0
2.4.6-Tribromophenol	118-79-6	0.5	%		----	68.2	65.5	72.8	69.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	97.6	95.7	98.5	97.8
Anthracene-d10	1719-06-8	0.5	%		----	103	101	102	103
4-Terphenyl-d14	1718-51-0	0.5	%		----	106	104	103	97.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	85.5	98.3	89.8	98.2
Toluene-D8	2037-26-5	0.2	%		----	102	115	102	114
4-Bromofluorobenzene	460-00-4	0.2	%		----	110	127	112	121

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SP1-3	SP2-1	SP2-2	SP2-3	SP3-1
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-092	ES2040974-093	ES2040974-094	ES2040974-095	ES2040974-096
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	1.7	9.0	10.5	12.2	18.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Sample weight (dry)	----	0.01	g	39.1	114	83.5	76.0	53.7
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	<5	<5	<5	9
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	20	6	5	10	19
Copper	7440-50-8	5	mg/kg	13	5	<5	7	14
Lead	7439-92-1	5	mg/kg	15	9	9	12	17
Nickel	7440-02-0	2	mg/kg	6	3	3	4	7
Zinc	7440-66-6	5	mg/kg	18	15	12	16	33
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SP1-3	SP2-1	SP2-2	SP2-3	SP3-1
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-092	ES2040974-093	ES2040974-094	ES2040974-095	ES2040974-096
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**97.3**	**96.2**	**93.9**	**93.9**	**96.8**
2-Chlorophenol-D4	93951-73-6	0.5	%		**97.8**	**95.5**	**98.1**	**98.3**	**102**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SP1-3	SP2-1	SP2-2	SP2-3	SP3-1
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-092	ES2040974-093	ES2040974-094	ES2040974-095	ES2040974-096
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	0.5	%		59.5	70.0	77.7	76.1	78.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		93.3	94.1	109	109	114
Anthracene-d10	1719-06-8	0.5	%		103	102	107	107	112
4-Terphenyl-d14	1718-51-0	0.5	%		108	105	104	104	109
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		91.4	90.4	104	104	101
Toluene-D8	2037-26-5	0.2	%		106	108	91.3	90.4	89.4
4-Bromofluorobenzene	460-00-4	0.2	%		115	121	96.4	96.9	95.2

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SP4-1	SP4-2	TS1	TB1	QA03
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-097	ES2040974-098	ES2040974-100	ES2040974-101	ES2040974-103
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.7	6.0	----	----	11.9
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	----	----	----
Asbestos Type	1332-21-4	-	--	-	-	----	----	----
Sample weight (dry)	----	0.01	g	114	50.7	----	----	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	----	----	----
Organic Fibre	----	0.1	g/kg	No	No	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	9	----	----	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	<1
Chromium	7440-47-3	2	mg/kg	20	15	----	----	16
Copper	7440-50-8	5	mg/kg	15	18	----	----	10
Lead	7439-92-1	5	mg/kg	18	12	----	----	14
Nickel	7440-02-0	2	mg/kg	8	12	----	----	5
Zinc	7440-66-6	5	mg/kg	28	40	----	----	15
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	<0.1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SP4-1	SP4-2	TS1	TB1	QA03
			Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit	ES2040974-097	ES2040974-098	ES2040974-100	ES2040974-101	ES2040974-103
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	----	----	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	----	----	**1.2**
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	**13**	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	**16**	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	**4.0**	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	**0.6**	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	**3.8**	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	**1.6**	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	**10.0**	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	**5.4**	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**94.9**	**95.4**	----	----	**98.3**
2-Chlorophenol-D4	93951-73-6	0.5	%	**99.9**	**101**	----	----	**104**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SP4-1	SP4-2	TS1	TB1	QA03
				Sampling date / time	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00	18-Nov-2020 00:00
Compound	CAS Number	LOR	Unit		ES2040974-097	ES2040974-098	ES2040974-100	ES2040974-101	ES2040974-103
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	0.5	%		76.4	76.4	----	----	79.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		112	113	----	----	115
Anthracene-d10	1719-06-8	0.5	%		109	110	----	----	114
4-Terphenyl-d14	1718-51-0	0.5	%		107	107	----	----	110
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		108	111	104	110	113
Toluene-D8	2037-26-5	0.2	%		93.2	99.0	87.3	93.2	99.2
4-Bromofluorobenzene	460-00-4	0.2	%		99.0	102	95.1	99.3	101

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	TSC1	----	----	----	----
			Sampling date / time	18-Nov-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2040974-104	--------	--------	--------	--------
				Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	**22**	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	**26**	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	**7.3**	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	**1.0**	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	**6.1**	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	**2.4**	----	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg	**16.8**	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg	**8.5**	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**108**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	**96.0**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**105**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RB1	----	----	----	----
				Sampling date / time	18-Nov-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2040974-099	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RB1	----	----	----	----
				Sampling date / time	18-Nov-2020 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2040974-099	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**21.8**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**48.8**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**69.2**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**66.4**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**79.7**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**88.5**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**110**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**99.7**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**103**	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	TP01_0.1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP02_0.5 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP03_0.1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP04_0.3 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP05_1.0 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP06_0.1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP08_1.6 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP09_0.1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP10_0.1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	BH02_1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	BH03_0.5 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	BH04_0.5 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	BH05_0.5 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP1-1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP1-2 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP1-3 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP2-1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP2-2 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP2-3 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP3-1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP4-1 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	SP4-2 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	TP07_0.5 - 18-Nov-2020 00:00	Mid brown soil.
EA200: Description	BH01_1 - 18-Nov-2020 00:00	Mid brown soil.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

QUALITY CONTROL REPORT

Work Order	: **ES2040974**	Page	: 1 of 16
Client	: **WSP Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: MS IMOGEN POWELL	Contact	: Grace White
Address	: GPO BOX 5394 SYDNEY NSW, AUSTRALIA 2001	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: EASTERN CREEK	Date Samples Received	: 19-Nov-2020
Order number	: PS122611	Date Analysis Commenced	: 20-Nov-2020
C-O-C number	: ----	Issue Date	: 24-Nov-2020
Sampler	: Roderick Zhang		
Site	: ----		
Quote number	: EN/008/20		
No. of samples received	: 102		
No. of samples analysed	: 47		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Dian Dao	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3374347)									
ES2040974-001	TP01_0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	18	12.1	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	6	7	18.5	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	10	11	15.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	15	19	22.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	21	26	22.4	No Limit
ES2040974-057	BH01_1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	15	9.67	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	14	14	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	6	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	45	41	9.15	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	21	18	14.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	64	62	3.35	0% - 50%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3374349)									
ES2040974-094	SP2-2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	5	6	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	3	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	6	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	12	25.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	14	20.9	No Limit
EA002: pH 1:5 (Soils) (QC Lot: 3374327)									
ES2040468-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.3	5.2	0.00	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA002: pH 1:5 (Soils) (QC Lot: 3374327) - continued									
ES2040974-016	TP04_0.5	EA002: pH Value	----	0.1	pH Unit	5.5	5.5	0.00	0% - 20%
EA002: pH 1:5 (Soils) (QC Lot: 3374331)									
ES2041012-002	Anonymous	EA002: pH Value	----	0.1	pH Unit	12.1	12.0	1.08	0% - 20%
EA010: Conductivity (1:5) (QC Lot: 3374330)									
ES2040974-002	TP01_0.3	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	429	448	4.33	0% - 20%
ES2041012-002	Anonymous	EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	3920	3830	2.32	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3374333)									
ES2040468-003	Anonymous	EA055: Moisture Content	----	0.1	%	12.3	11.4	8.03	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3374356)									
ES2040974-020	TP05_1.0	EA055: Moisture Content	----	0.1	%	14.8	13.6	8.59	0% - 50%
ES2040974-089	QA01	EA055: Moisture Content	----	0.1	%	4.6	5.3	12.5	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3374357)									
ES2040974-098	SP4-2	EA055: Moisture Content	----	0.1	%	6.0	7.2	18.8	No Limit
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 3378126)									
ES2040974-060	BH01_4	ED006: Exchangeable Sodium Percent	----	0.2	%	37.4	37.7	0.793	0% - 20%
		ED006: Exchangeable Calcium	----	0.2	meq/100g	1.5	1.5	0.00	No Limit
		ED006: Exchangeable Magnesium	----	0.2	meq/100g	6.1	6.2	0.00	0% - 20%
		ED006: Exchangeable Potassium	----	0.2	meq/100g	<0.2	<0.2	0.00	No Limit
		ED006: Exchangeable Sodium	----	0.2	meq/100g	4.6	4.8	2.66	0% - 20%
		ED006: Cation Exchange Capacity	----	0.2	meq/100g	12.4	12.6	1.87	0% - 20%
ED007: Exchangeable Cations (QC Lot: 3378129)									
ES2040636-003	Anonymous	ED007: Exchangeable Sodium Percent	----	0.1	%	4.2	4.2	0.00	0% - 20%
		ED007: Exchangeable Calcium	----	0.1	meq/100g	7.0	7.1	1.86	0% - 20%
		ED007: Exchangeable Magnesium	----	0.1	meq/100g	1.9	1.9	0.00	0% - 50%
		ED007: Exchangeable Potassium	----	0.1	meq/100g	0.4	0.4	0.00	No Limit
		ED007: Exchangeable Sodium	----	0.1	meq/100g	0.4	0.4	0.00	No Limit
		ED007: Cation Exchange Capacity	----	0.1	meq/100g	9.6	9.8	1.75	0% - 20%
ED040S: Soluble Major Anions (QC Lot: 3374328)									
ES2040974-016	TP04_0.5	ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	90	100	15.2	0% - 50%
ED045G: Chloride by Discrete Analyser (QC Lot: 3374329)									
ES2040974-001	TP01_0.1	ED045G: Chloride	16887-00-6	10	mg/kg	160	130	20.6	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3374348)									
ES2040974-001	TP01_0.1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2040974-057	BH01_1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3374350)									
ES2040974-094	SP2-2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3374237)									
ES2040974-001	TP01_0.1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3374237) - continued									
ES2040974-001	TP01_0.1	EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES2040974-057	BH01_1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3374240)									

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3374240) - continued									
ES2040974-094	SP2-2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3374228)									
ES2040974-001	TP01_0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2040974-057	BH01_1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3374238)									
ES2040974-001	TP01_0.1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2040974-057	BH01_1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3374239)									
ES2040974-094	SP2-2	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3376301)									
ES2040974-094	SP2-2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2040987-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3374228)									
ES2040974-001	TP01_0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3374228) - continued									
ES2040974-057	BH01_1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3374238)									
ES2040974-001	TP01_0.1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES2040974-057	BH01_1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3374239)									
ES2040974-094	SP2-2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3376301)									
ES2040974-094	SP2-2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES2040987-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 3374228)									
ES2040974-001	TP01_0.1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES2040974-057	BH01_1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 3376301)									
ES2040974-094	SP2-2	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES2040987-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080: BTEXN (QC Lot: 3376301) - continued									
ES2040987-002	Anonymous	EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3374323)									
ES2040800-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	3.51	3.81	8.14	0% - 20%
ES2041084-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3374421)									
ES2039945-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
ES2040903-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	0.0003	0.0003	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3374902)									
EP2012655-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	680	650	4.62	0% - 20%
ES2040812-057	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3374902)									
EP2012655-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	700	670	4.38	0% - 20%
ES2040812-057	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3374902)									
EP2012655-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	197	199	1.29	0% - 20%
		EP080: Toluene	108-88-3	2	µg/L	142	136	4.43	0% - 20%
		EP080: Ethylbenzene	100-41-4	2	µg/L	8	8	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	59	58	1.72	0% - 20%
		EP080: ortho-Xylene	95-47-6	2	µg/L	19	19	0.00	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 3374902) - continued									
EP2012655-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	14	15	0.00	No Limit
ES2040812-057	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3374347)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	88.0	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	76.2	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	88.8	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	91.5	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	82.1	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	80.0	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	66.9	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3374349)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	88.0	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	87.6	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	91.9	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	91.5	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	82.4	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	81.6	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	69.2	66.0	133
EA010: Conductivity (1:5) (QCLot: 3374330)								
EA010: Electrical Conductivity @ 25°C	----	1	µS/cm	<1	1412 µS/cm	# 110	92.0	108
ED006: Exchangeable Cations on Alkaline Soils (QCLot: 3378126)								
ED006: Exchangeable Calcium	----	0.2	meq/100g	<0.2	2.5 meq/100g	102	80.0	110
ED006: Exchangeable Magnesium	----	0.2	meq/100g	<0.2	4.17 meq/100g	106	80.0	110
ED006: Exchangeable Potassium	----	0.2	meq/100g	<0.2	1.28 meq/100g	108	80.0	110
ED006: Exchangeable Sodium	----	0.2	meq/100g	<0.2	2.17 meq/100g	98.2	80.0	110
ED006: Cation Exchange Capacity	----	0.2	meq/100g	<0.2	----	----	----	----
ED006: Exchangeable Sodium Percent	----	0.2	%	<0.2	----	----	----	----
ED007: Exchangeable Cations (QCLot: 3378129)								
ED007: Exchangeable Calcium	----	0.1	meq/100g	<0.1	1 meq/100g	100	75.8	120
ED007: Exchangeable Magnesium	----	0.1	meq/100g	<0.1	1.67 meq/100g	102	74.9	115
ED007: Exchangeable Potassium	----	0.1	meq/100g	<0.1	0.51 meq/100g	104	80.0	120
ED007: Exchangeable Sodium	----	0.1	meq/100g	<0.1	0.87 meq/100g	106	80.0	120
ED007: Cation Exchange Capacity	----	0.1	meq/100g	<0.1	----	----	----	----
ED007: Exchangeable Sodium Percent	----	0.1	%	<0.1	----	----	----	----
ED040S: Soluble Major Anions (QCLot: 3374328)								
ED040S: Sulfate as SO4 2-	14808-79-8	10	mg/kg	<10	150 mg/kg	100.0	80.0	120
ED045G: Chloride by Discrete Analyser (QCLot: 3374329)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
ED045G: Chloride by Discrete Analyser (QCLot: 3374329) - continued								
ED045G: Chloride	16887-00-6	10	mg/kg	<10	250 mg/kg	97.0	75.0	125
				<10	5000 mg/kg	106	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3374348)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	90.5	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3374350)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	86.7	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3374237)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	99.0	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	108	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	110	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	107	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	104	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	103	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	102	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	94.2	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	99.8	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	96.2	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	90.8	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	90.7	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	98.7	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	83.8	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	86.1	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	80.8	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3374240)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	102	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	105	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	99.5	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	101	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	104	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	107	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	106	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	106	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	97.6	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	97.8	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	81.1	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	89.1	74.0	126

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3374240) - continued								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.8	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	91.7	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	93.2	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	92.1	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374228)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	101	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374238)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	100	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	104	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	109	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374239)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	101	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	108	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	107	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3376301)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	102	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374228)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	102	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374238)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	102	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	106	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	111	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374239)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	98.3	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	104	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	110	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3376301)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	99.7	68.4	128
EP080: BTEXN (QCLot: 3374228)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	99.0	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	101	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	105	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	104	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	105	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	95.6	63.0	119
EP080: BTEXN (QCLot: 3376301)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 3376301) - continued								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	114	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	101	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	94.8	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	98.6	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	96.6	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	80.9	63.0	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 3374323)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.2	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.4	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.9	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.7	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.4	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	91.1	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.0	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3374421)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	99.6	77.0	111
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3374222)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	72.4	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	87.9	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	94.2	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	85.3	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	93.0	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	87.2	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	98.2	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	98.5	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	98.0	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	93.4	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	95.4	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	83.3	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	91.8	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	95.7	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	99.4	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	99.7	59.1	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Recovery Limits (%)
				Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374221)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	62.0	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	77.8	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	71.0	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374902)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	95.7	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374221)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	64.7	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	78.0	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	67.4	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374902)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	96.9	75.0	127
EP080: BTEXN (QCLot: 3374902)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.8	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	101	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	105	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	106	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	108	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	105	70.0	120

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3374347)							
ES2040974-001	TP01_0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	98.0	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	95.6	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	99.1	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	95.4	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	95.7	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	96.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	95.7	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3374349)							
ES2040974-094	SP2-2	EG005T: Arsenic	7440-38-2	50 mg/kg	99.2	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	97.7	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3374349) - continued							
ES2040974-094	SP2-2	EG005T: Chromium	7440-47-3	50 mg/kg	99.8	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	95.7	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.2	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	99.8	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	98.2	66.0	133
ED045G: Chloride by Discrete Analyser (QCLot: 3374329)							
ES2040974-001	TP01_0.1	ED045G: Chloride	16887-00-6	2500 mg/kg	98.3	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3374348)							
ES2040974-001	TP01_0.1	EG035T: Mercury	7439-97-6	5 mg/kg	82.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3374350)							
ES2040974-094	SP2-2	EG035T: Mercury	7439-97-6	5 mg/kg	89.8	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3374237)							
ES2040974-001	TP01_0.1	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	100.0	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	104	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3374240)							
ES2040974-094	SP2-2	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.0	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	100	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374228)							
ES2040974-001	TP01_0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	103	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374238)							
ES2040974-001	TP01_0.1	EP071: C10 - C14 Fraction	----	523 mg/kg	104	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	115	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	118	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374239)							
ES2040974-094	SP2-2	EP071: C10 - C14 Fraction	----	523 mg/kg	93.1	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	106	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	113	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3376301)							
ES2040974-094	SP2-2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	95.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374228)							
ES2040974-001	TP01_0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	103	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374238)							
ES2040974-001	TP01_0.1	EP071: >C10 - C16 Fraction	----	860 mg/kg	101	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	115	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	107	52.0	132

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374239)							
ES2040974-094	SP2-2	EP071: >C10 - C16 Fraction	----	860 mg/kg	95.2	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	110	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	103	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3376301)							
ES2040974-094	SP2-2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	92.6	70.0	130
EP080: BTEXN (QCLot: 3374228)							
ES2040974-001	TP01_0.1	EP080: Benzene	71-43-2	2.5 mg/kg	103	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	103	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	107	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	104	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	106	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	94.0	70.0	130
EP080: BTEXN (QCLot: 3376301)							
ES2040974-094	SP2-2	EP080: Benzene	71-43-2	2.5 mg/kg	99.5	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	90.1	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	89.3	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	90.9	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	92.2	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	77.1	70.0	130

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 3374323)							
ES2040919-005	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	88.9	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	92.3	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	94.3	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	91.0	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	92.5	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	90.0	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	91.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3374421)							
ES2039945-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	89.6	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3374902)							
EP2012655-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	83.9	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3374902)							
EP2012655-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	84.4	70.0	130
EP080: BTEXN (QCLot: 3374902)							
EP2012655-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	# Not Determined	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	# Not Determined	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.5	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	102	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.1	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	101	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2040974**	Page	: 1 of 13
Client	: **WSP Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: MS IMOGEN POWELL	Telephone	: +61 2 8784 8555
Project	: EASTERN CREEK	Date Samples Received	: 19-Nov-2020
Site	: ----	Issue Date	: 24-Nov-2020
Sampler	: Roderick Zhang	No. of samples received	: 102
Order number	: PS122611	No. of samples analysed	: 47

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Laboratory Control Spike (LCS) Recoveries							
EA010: Conductivity (1:5)	QC-3374330-002	----	**Electrical Conductivity @ 25°C**	----	110 %	92.0-108%	**Recovery greater than upper control limit**

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP080: BTEXN	EP2012655--001	Anonymous	**Benzene**	71-43-2	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP080: BTEXN	EP2012655--001	Anonymous	**Toluene**	108-88-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	6	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA002: pH 1:5 (Soils)								
Soil Glass Jar - Unpreserved (EA002)								
TP01_0.1,	TP01_0.3,	**18-Nov-2020**	**20-Nov-2020**	25-Nov-2020	✓	**20-Nov-2020**	20-Nov-2020	✓
TP01_0.6,	TP01_1.1,							
TP01_1.5,	TP04_0.3,							
TP04_0.5,	TP06_0.3,							
TP06_1.1,	TP06_3.1,							
TP07_0.1,	TP07_0.3,							
TP07_0.8,	TP07_1.3,							
TP07_2.0,	TP10_0.3,							
TP10_0.5								
EA010: Conductivity (1:5)								
Soil Glass Jar - Unpreserved (EA010)								
TP01_0.3,	TP01_1.1,	**18-Nov-2020**	**20-Nov-2020**	25-Nov-2020	✓	**20-Nov-2020**	18-Dec-2020	✓
TP01_1.5,	TP06_0.3,							
TP06_1.1,	TP06_3.1,							
TP07_0.3,	TP07_0.8,							
TP07_1.3,	TP07_2.0							
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
TP01_0.1,	TP01_0.6,	**18-Nov-2020**	**----**	----	----	**20-Nov-2020**	02-Dec-2020	✓
TP02_0.5,	TP03_0.1,							
TP04_0.3,	TP04_0.5,							
TP05_1.0,	TP06_0.1,							
TP07_0.1,	TP07_0.3,							
TP07_0.5,	TP08_1.6,							
TP09_0.1,	TP10_0.1,							
TP10_0.3,	TP10_0.5,							
BH01_1,	BH02_1,							
BH03_0.5,	BH04_0.5,							
BH05_0.5,	QA01,							
SP1-1,	SP1-2,							
SP1-3,	SP2-1,							
SP2-2,	QA03,							
SP2-3,								
SP3-1,	SP4-1,							
SP4-2								

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200)							
TP07_0.5, BH01_1, SP1-2	**18-Nov-2020**	**----**	----	----	**23-Nov-2020**	17-May-2021	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
TP01_0.1, TP02_0.5, TP03_0.1, TP04_0.3, TP05_1.0, TP06_0.1, TP08_1.6, TP09_0.1, TP10_0.1, BH02_1, BH03_0.5, BH04_0.5, BH05_0.5, SP1-1, SP1-3, SP2-1, SP2-2, SP2-3	**18-Nov-2020**	**----**	----	----	**23-Nov-2020**	17-May-2021	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
SP3-1, SP4-1, SP4-2	**18-Nov-2020**	**----**	----	----	**24-Nov-2020**	17-May-2021	✓
ED006: Exchangeable Cations on Alkaline Soils							
Soil Glass Jar - Unpreserved (ED006)							
BH01_4, BH04_2	**18-Nov-2020**	**23-Nov-2020**	16-Dec-2020	✓	**23-Nov-2020**	16-Dec-2020	✓
ED007: Exchangeable Cations							
Soil Glass Jar - Unpreserved (ED007)							
BH01_1	**18-Nov-2020**	**23-Nov-2020**	16-Dec-2020	✓	**23-Nov-2020**	16-Dec-2020	✓
ED040S : Soluble Sulfate by ICPAES							
Soil Glass Jar - Unpreserved (ED040S)							
TP01_0.1, TP01_0.6, TP04_0.3, TP04_0.5, TP07_0.1, TP07_0.3, TP10_0.3, TP10_0.5	**18-Nov-2020**	**20-Nov-2020**	16-Dec-2020	✓	**20-Nov-2020**	18-Dec-2020	✓
ED045G: Chloride by Discrete Analyser							
Soil Glass Jar - Unpreserved (ED045G)							
TP01_0.1, TP01_0.6, TP04_0.3, TP04_0.5, TP07_0.1, TP07_0.3, TP10_0.3, TP10_0.5	**18-Nov-2020**	**20-Nov-2020**	16-Dec-2020	✓	**20-Nov-2020**	18-Dec-2020	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
TP01_0.1, TP02_0.5, TP03_0.1, TP04_0.3, TP05_1.0, TP06_0.1, TP07_0.5, TP08_1.6, TP09_0.1, TP10_0.1, BH01_1, BH02_1, BH03_0.5, BH04_0.5, BH05_0.5, QA01, SP1-1, SP1-2, SP1-3, SP2-1, SP2-2, SP2-3, SP3-1, SP4-1, SP4-2, QA03	**18-Nov-2020**	**20-Nov-2020**	17-May-2021	✓	**23-Nov-2020**	17-May-2021	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
TP01_0.1, TP02_0.5, TP03_0.1, TP04_0.3, TP05_1.0, TP06_0.1, TP07_0.5, TP08_1.6, TP09_0.1, TP10_0.1, BH01_1, BH02_1, BH03_0.5, BH04_0.5, BH05_0.5, QA01, SP1-1, SP1-2, SP1-3, SP2-1, SP2-2, SP2-3, SP3-1, SP4-1, SP4-2, QA03	**18-Nov-2020**	**20-Nov-2020**	16-Dec-2020	✓	**23-Nov-2020**	16-Dec-2020	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
TP01_0.1, TP02_0.5, TP03_0.1, TP04_0.3, TP05_1.0, TP06_0.1, TP07_0.5, TP08_1.6, TP09_0.1, TP10_0.1, BH01_1, BH02_1, BH03_0.5, BH04_0.5, BH05_0.5, QA01, SP1-1, SP1-2, SP1-3, SP2-1, SP2-2, SP2-3, SP3-1, SP4-1, SP4-2, QA03	**18-Nov-2020**	**20-Nov-2020**	02-Dec-2020	✓	**20-Nov-2020**	30-Dec-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
TP01_0.1, TP02_0.5, TP03_0.1, TP04_0.3, TP05_1.0, TP06_0.1, TP07_0.5, TP08_1.6, TP09_0.1, TP10_0.1, BH01_1, BH02_1, BH03_0.5, BH04_0.5, BH05_0.5, QA01, SP1-1, SP1-2, SP1-3, SP2-1, SP2-2, SP2-3, SP3-1, SP4-1, SP4-2, TS1, TB1, QA03, TSC1	**18-Nov-2020**	**20-Nov-2020**	02-Dec-2020	✓	**20-Nov-2020**	02-Dec-2020	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
TP01_0.1, TP02_0.5, TP03_0.1, TP04_0.3, TP05_1.0, TP06_0.1, TP07_0.5, TP08_1.6, TP09_0.1, TP10_0.1, BH01_1, BH02_1, BH03_0.5, BH04_0.5, BH05_0.5, QA01, SP1-1, SP1-2, SP1-3, SP2-1, SP2-2, SP2-3, SP3-1, SP4-1, SP4-2, TS1, TB1, QA03, TSC1	**18-Nov-2020**	**20-Nov-2020**	02-Dec-2020	✓	**20-Nov-2020**	02-Dec-2020	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
TP01_0.1, TP02_0.5, TP03_0.1, TP04_0.3, TP05_1.0, TP06_0.1, TP07_0.5, TP08_1.6, TP09_0.1, TP10_0.1, BH01_1, BH02_1, BH03_0.5, BH04_0.5, BH05_0.5, QA01, SP1-1, SP1-2, SP1-3, SP2-1, SP2-2, SP2-3, SP3-1, SP4-1, SP4-2, TS1, TB1, QA03, TSC1	**18-Nov-2020**	**20-Nov-2020**	02-Dec-2020	✓	**20-Nov-2020**	02-Dec-2020	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
RB1	**18-Nov-2020**	**20-Nov-2020**	17-May-2021	✓	**20-Nov-2020**	17-May-2021	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
RB1	**18-Nov-2020**	**----**	----	----	**20-Nov-2020**	16-Dec-2020	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
RB1	**18-Nov-2020**	**20-Nov-2020**	25-Nov-2020	✓	**22-Nov-2020**	30-Dec-2020	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
RB1	**18-Nov-2020**	**20-Nov-2020**	25-Nov-2020	✓	**21-Nov-2020**	30-Dec-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
RB1	**18-Nov-2020**	**20-Nov-2020**	02-Dec-2020	✓	**20-Nov-2020**	02-Dec-2020	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
RB1	**18-Nov-2020**	**20-Nov-2020**	25-Nov-2020	✓	**21-Nov-2020**	30-Dec-2020	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
RB1	**18-Nov-2020**	**20-Nov-2020**	02-Dec-2020	✓	**20-Nov-2020**	02-Dec-2020	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
RB1	**18-Nov-2020**	**20-Nov-2020**	02-Dec-2020	✓	**20-Nov-2020**	02-Dec-2020	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Chloride Soluble By Discrete Analyser	ED045G	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Anions - Soluble	ED040S	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	4	36	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	26	**11.54**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	3	22	**13.64**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	26	**11.54**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	26	**11.54**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	35	**11.43**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Chloride Soluble By Discrete Analyser	ED045G	2	8	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Anions - Soluble	ED040S	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Chloride Soluble By Discrete Analyser	ED045G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Electrical Conductivity (1:5)	EA010	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations	ED007	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Exchangeable Cations on Alkaline Soils	ED006	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Major Anions - Soluble	ED040S	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	26	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	**5.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Chloride Soluble By Discrete Analyser	ED045G	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Matrix Spikes (MS) - Continued							
PAH/Phenols (SIM)	EP075(SIM)	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	7	28.57	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	6	0.00	10.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	5	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	6	0.00	5.00	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	In house: Referenced to Rayment and Lyons 4A1 and APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Electrical Conductivity (1:5)	EA010	SOIL	In house: Referenced to Rayment and Lyons 3A1 and APHA 2510. Conductivity is determined on soil samples using a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Exchangeable Cations on Alkaline Soils	ED006	SOIL	In house: Referenced to Soil Survey Test Method C5. Soluble salts are removed from the sample prior to analysis. Cations are exchanged from the sample by contact with alcoholic ammonium chloride at pH 8.5. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil.
Exchangeable Cations	ED007	SOIL	In house: Referenced to Rayment & Lyons Method 15A1. Cations are exchanged from the sample by contact with Ammonium Chloride. They are then quantitated in the final solution by ICPAES and reported as meq/100g of original soil. This method is compliant with NEPM Schedule B(3).
Major Anions - Soluble	ED040S	SOIL	In house: Soluble Anions are determined off a 1:5 soil / water extract by ICPAES.
Chloride Soluble By Discrete Analyser	ED045G	SOIL	In house: Referenced to APHA 4500-Cl- E. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride.in the presence of ferric ions the librated thiocynate forms highly-coloured ferric thiocynate which is measured at 480 nm. Analysis is performed on a 1:5 soil / water leachate.
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Analytical Methods	Method	Matrix	Method Descriptions
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Exchangeable Cations Preparation Method (Alkaline Soils)	ED006PR	SOIL	In house: Referenced to Rayment and Lyons method 15C1.
Exchangeable Cations Preparation Method	ED007PR	SOIL	In house: Referenced to Rayment & Lyons method 15A1. A 1M NH4Cl extraction by end over end tumbling at a ratio of 1:20. There is no pretreatment for soluble salts. Extracts can be run by ICP for cations.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

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Sydney
NSW 2001

Project Name: EASTERN CREEK

Order No.: PS122611
Report #: 758324
Phone: 02 9272 5586
Fax: 02 9272 5101

Received: Nov 20, 2020 3:30 PM
Due: Nov 23, 2020
Priority: 1 Day
Contact Name: Imogen Powell

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						HOLD	Moisture Set	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						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	QA01A	Nov 18, 2020		Soil	S20-No36675		X	X
2	QA03A	Nov 18, 2020		Soil	S20-No36676		X	X
3	QA02A	Nov 18, 2020		Soil	S20-No36677	X		
Test Counts						1	2	2

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Sample Receipt Advice

Company name:	WSP Australia P/L NSW
Contact name:	Imogen Powell
Project name:	EASTERN CREEK
Project ID:	Not provided
Turnaround time:	1 Day
Date/Time received	Nov 20, 2020 3:30 PM
Eurofins reference	758324

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of a random sample selected from the batch as recorded by Eurofins Sample Receipt : 10.6 degrees Celsius.
✓	All samples have been received as described on the above COC.
✓	COC has been completed correctly.
✓	Attempt to chill was evident.
✓	Appropriately preserved sample containers have been used.
✓	All samples were received in good condition.
✓	Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
✓	Appropriate sample containers have been used.
✓	Sample containers for volatile analysis received with zero headspace.
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:

Alena Bounkeua on phone : or by email: AlenaBounkeua@eurofins.com

Results will be delivered electronically via email to Imogen Powell - imogen.powell@wsp.com.

Global Leader - Results you can trust

eurofins | Environment Testing

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NATA # 1261 Site # 20794

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NATA # 1261
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IANZ # 1290

Company Name: WSP Australia P/L NSW
Address: Level 27, Ernst & Young Centre
Sydney
NSW 2001

Project Name: EASTERN CREEK

Order No.: PS122611
Report #: 758324
Phone: 02 9272 5586
Fax: 02 9272 5101

Received: Nov 20, 2020 3:30 PM
Due: Nov 23, 2020
Priority: 1 Day
Contact Name: Imogen Powell

Eurofins Analytical Services Manager : Alena Bounkeua

Sample Detail						HOLD	Moisture Set	Eurofins Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271								
Sydney Laboratory - NATA Site # 18217						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	QA01A	Nov 18, 2020		Soil	S20-No36675		X	X
2	QA03A	Nov 18, 2020		Soil	S20-No36676		X	X
3	QA02A	Nov 18, 2020		Soil	S20-No36677	X		
Test Counts						1	2	2

WSP Australia P/L NSW
Level 27, Ernst & Young Centre
Sydney
NSW 2001

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Imogen Powell**

Report **758324-S**
Project name EASTERN CREEK
Received Date Nov 20, 2020

Client Sample ID			**QA01A**	**QA03A**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S20-No36675**	**S20-No36676**
Date Sampled			**Nov 18, 2020**	**Nov 18, 2020**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	99	110
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			QA01A	QA03A
Sample Matrix			Soil	Soil
Eurofins Sample No.			S20-No36675	S20-No36676
Date Sampled			Nov 18, 2020	Nov 18, 2020
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	101	91
p-Terphenyl-d14 (surr.)	1	%	115	111
Heavy Metals				
Arsenic	2	mg/kg	9.4	8.2
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	19	20
Copper	5	mg/kg	19	14
Lead	5	mg/kg	18	15
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	9.4	9.1
Zinc	5	mg/kg	77	32
% Moisture	1	%	2.4	15

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	Nov 20, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Nov 20, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Nov 20, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Nov 20, 2020	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Nov 20, 2020	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Nov 20, 2020	180 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Nov 20, 2020	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

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Address: Level 27, Ernst & Young Centre
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NSW 2001

Project Name: EASTERN CREEK

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Eurofins Analytical Services Manager : Alena Bounkeua

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External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QA01A	Nov 18, 2020		Soil	S20-No36675		X	X
2	QA03A	Nov 18, 2020		Soil	S20-No36676		X	X
3	QA02A	Nov 18, 2020		Soil	S20-No36677	X		
Test Counts						1	2	2

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							
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							
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	%	84			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	%	102			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	90			70-130	Pass	
Toluene	%	88			70-130	Pass	
Ethylbenzene	%	91			70-130	Pass	
m&p-Xylenes	%	94			70-130	Pass	
o-Xylene	%	94			70-130	Pass	
Xylenes - Total*	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	95			70-130	Pass	
TRH C6-C10	%	82			70-130	Pass	
TRH >C10-C16	%	101			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	118			70-130	Pass	
Acenaphthylene	%	119			70-130	Pass	
Anthracene	%	123			70-130	Pass	
Benz(a)anthracene	%	126			70-130	Pass	
Benzo(a)pyrene	%	120			70-130	Pass	
Benzo(b&j)fluoranthene	%	130			70-130	Pass	
Benzo(g.h.i)perylene	%	123			70-130	Pass	
Benzo(k)fluoranthene	%	116			70-130	Pass	
Chrysene	%	130			70-130	Pass	
Dibenz(a.h)anthracene	%	124			70-130	Pass	
Fluoranthene	%	130			70-130	Pass	
Fluorene	%	121			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	116			70-130	Pass	
Naphthalene	%	123			70-130	Pass	
Phenanthrene	%	117			70-130	Pass	
Pyrene	%	129			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	100			80-120	Pass	
Cadmium	%	97			80-120	Pass	
Chromium	%	106			80-120	Pass	
Copper	%	105			80-120	Pass	
Lead	%	103			80-120	Pass	
Mercury	%	106			80-120	Pass	
Nickel	%	103			80-120	Pass	
Zinc	%	105			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 C10-C14	S20-No29708	NCP	%	113			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S20-No31636	NCP	%	93			70-130	Pass	
Toluene	S20-No31636	NCP	%	85			70-130	Pass	
Ethylbenzene	S20-No27431	NCP	%	98			70-130	Pass	
m&p-Xylenes	S20-No27431	NCP	%	91			70-130	Pass	
o-Xylene	S20-No27431	NCP	%	104			70-130	Pass	
Xylenes - Total*	S20-No27431	NCP	%	95			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S20-No31636	NCP	%	93			70-130	Pass	
TRH >C10-C16	S20-No29708	NCP	%	112			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S20-No24844	NCP	%	117			70-130	Pass	
Acenaphthylene	S20-No24844	NCP	%	118			70-130	Pass	
Anthracene	S20-No24844	NCP	%	124			70-130	Pass	
Benz(a)anthracene	S20-No24844	NCP	%	111			70-130	Pass	
Benzo(a)pyrene	S20-No24844	NCP	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	S20-No24757	NCP	%	113			70-130	Pass	
Benzo(g.h.i)perylene	S20-No24844	NCP	%	87			70-130	Pass	
Benzo(k)fluoranthene	S20-No24757	NCP	%	125			70-130	Pass	
Chrysene	S20-No24844	NCP	%	104			70-130	Pass	
Dibenz(a.h)anthracene	S20-No24844	NCP	%	96			70-130	Pass	
Fluoranthene	S20-No24844	NCP	%	120			70-130	Pass	
Fluorene	S20-No24844	NCP	%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S20-No24844	NCP	%	99			70-130	Pass	
Naphthalene	S20-No24844	NCP	%	113			70-130	Pass	
Phenanthrene	S20-No24844	NCP	%	88			70-130	Pass	
Pyrene	S20-No24844	NCP	%	116			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S20-No36478	NCP	%	85			75-125	Pass	
Cadmium	S20-No36478	NCP	%	84			75-125	Pass	
Chromium	S20-No36478	NCP	%	82			75-125	Pass	
Copper	S20-No30316	NCP	%	95			75-125	Pass	
Lead	S20-No36478	NCP	%	96			75-125	Pass	
Mercury	S20-No36478	NCP	%	86			75-125	Pass	
Nickel	S20-No30316	NCP	%	97			75-125	Pass	
Zinc	S20-No30316	NCP	%	96			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	S20-No27295	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S20-No27756	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S20-No27756	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S20-No27756	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S20-No27295	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S20-No27295	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S20-No27295	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S20-No27295	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S20-No27295	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S20-No27295	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S20-No27295	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S20-No27295	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S20-No27756	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S20-No27756	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S20-No27756	NCP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S20-No24808	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S20-No36771	NCP	mg/kg	5.7	4.8	15	30%	Pass	
Cadmium	S20-No36771	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S20-No36771	NCP	mg/kg	20	17	13	30%	Pass	
Copper	S20-No36771	NCP	mg/kg	15	17	11	30%	Pass	
Lead	S20-No36771	NCP	mg/kg	300	250	18	30%	Pass	
Mercury	S20-No36771	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S20-No36771	NCP	mg/kg	8.6	10	17	30%	Pass	
Zinc	S20-No36771	NCP	mg/kg	130	110	15	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S20-No36583	NCP	%	2.1	2.7	23	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised By

Alena Bounkeua	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Gabriele Cordero	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.

APPENDIX D

TEST PIT AND BORE LOGS

TEST PIT NO.

TEST PIT ENVIRONMENTAL LOG

TP01

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=0.9 ppm	ES			TOPSOIL: sandy CLAY, dark brown, fine to coarse sand, rootlets	D			No odour No ACM
	0.10	PID=1.6 ppm	ES			Silty sandy CLAY, orange with brown mottling, high plasticity				
		PID=1.7 ppm	ES			Becoming pale brown				
	1.00 1	PID=1 ppm	ES			SILTSTONE (EW): Grey with orange mottling				
	1.40	PID=1.1 ppm	ES			SILTSTONE (W): Grey/pale brown				
						END OF TEST PIT AT 1.60 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

TP02

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=1.2 ppm	ES			FILL: Sandy CLAY, dark grey, low plasticty with large concrete and sandstone blocks	M			No odour No ACM
		PID=1.4 ppm	ES							
		PID=1.6 ppm	ES							
	0.80	PID=1.3 ppm	ES			FILL: Sandy CLAY, orange, medium plasticity, with some gravels				
	1									
	1.40	PID=1.1 ppm	ES			Silty sandy CLAY, orange, high plasticity	D			
		PID=1.1 ppm	PID			Becoming pale brown/grey	M			
	2					END OF TEST PIT AT 2.00 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

TP03

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=2.2 ppm	ES			FILL: Sandy CLAY, dark grey, low plasticity, fine grained sand, with some gravels	D			No odour No ACM Rooting Evident
		PID=2.1 ppm	ES							
	0.40									
		PID=1.6 ppm	ES			Silty sandy CLAY, orange with brown mottling, high plasticity				
		PID=1.7 ppm	PID			Becoming pale brown	M			
	1					END OF TEST PIT AT 1.00 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

TP04

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=1 ppm	ES			FILL: Sandy CLAY, brown, low plasticity, fine grained sand with some gravels	D			Rooting evident No HC odour No ACM Geosmin smell
		PID=2.6 ppm	ES							
	0.30					Silty sandy CLAY, orange with brown mottling, high plasticity				
		PID=1.5 ppm	ES							
		PID=0.7 ppm	PID			Becoming pale brown	M			
	1					END OF TEST PIT AT 0.80 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

TP05

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=1.8 ppm	ES			FILL: Sandy CLAY, pink and grey with some brown mottling, low to medium plasticity, with some gravels	D			No odour No ACM
		PID=1.5 ppm	ES							
		PID=1.1 ppm	ES							
		PID=1.9 ppm	ES							
	1.00 1	PID=1.5 ppm	ES			Sandy CLAY, brown, low plasticity, fine grained sand				
	1.40	PID=2.4 ppm	ES			Sandy CLAY, grey/brown, low plasticity, coarse grained sand	M			
	1.80	PID=1.7 ppm	ES			Sandy CLAY, pale brown, medium plasticity, medium grained sand				
	2					END OF TEST PIT AT 2.00 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

TP06

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O	0.00	PID=1.4 ppm	ES			FILL: Sandy CLAY, grey/pale brown with some gravels	D			No odour No ACM
	0.20	PID=1.2 ppm	ES			Sandy CLAY, orange/red with grey mottling, medium plasticity	M			
	0.40	PID=1.1 ppm	ES			Silty sandy CLAY, pale brown, high plasticity				
	0.70	PID=1.6 ppm	ES			Sandy CLAY, dark brown, low plasticity, fine grained sand, trace gravels				
	1.00 1	PID=1.2 ppm	ES			Sandy CLAY, orange/brown with grey mottling, medium plasticity, trace gravels	D			
						Becoming low plasticity				
	1.80	PID=1.6 ppm	ES			Sandy CLAY, pale brown with orange mottling, low plasticity, with trace shale gravels	M			
	2									
	2.30	PID=0.9 ppm	ES			SILTSTONE (W): Grey/black/brown				
	3	PID=1.1 ppm	ES							
						END OF TEST PIT AT 3.10 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT NO.

TEST PIT ENVIRONMENTAL LOG

TP07

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	
Excavation Method:	**Excavator**	Surface RL:	
		Co-ords:	**N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=1.3 ppm	ES			FILL: Gravelly CLAY, brown with some igneous gravels	D			No HC odour No ACM
	0.10					Silty sandy CLAY, orange with brown mottling, medium to high plasticity, with some coarse grained sand				
		PID=1 ppm	ES							
		PID=1.1 ppm	ES							
										Potential ash like material
	0.70	PID=1.5 ppm	ES			Silty sandy CLAY, grey with yellow mottling, high plasticity with some siltstone gravels	M			
	1	PID=1.1 ppm	ES							
	1.20	PID=0.9 ppm	ES			SILTSTONE (EW): Red, with grey silty clay				
						Becoming harder to excavate				Becoming hard to dig
	1.90	PID=1 ppm	ES			SILTSTONE (W): Black with some grey/brown clay	D			Very hard
	2									
						END OF TEST PIT AT 2.30 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

TP08

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=1.3 ppm	ES			FILL: Silty CLAY, dary brown/dark grey, high plasticity, with trace gravels	M			Rooting evident No odour No ACM
	0.30	PID=1.5 ppm	ES			FILL: Sandy CLAY, brown, medum plasticity, with some gravels				
		PID=1.5 ppm	ES				D			
	0.90	PID=1.2 ppm	ES			FILL: Sandy gravelly CLAY, pink/red and brown, medium plasticity.				
	1									
		PID=1.4 ppm	ES							
	2									
	2.10	PID=1.9 ppm	ES			FILL: Sandy CLAY, pink/dark brown, medium plasticity, with trace gravels				
	2.40	PID=1.8 ppm	ES			Sandy CLAY, brown, low plasticity, with some gravels	M			
	2.80	PID=1.4 ppm	ES			Sandy CLAY, brown with some grey mottling, low plasticity, with some gravels	W			
	3									
						END OF TEST PIT AT 3.10 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

TP09

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST / FB VL L MD D VD H)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=1.7 ppm	ES			FILL: Sandy CLAY. grey, with some gravels	D			Grass No HC odour No ACM
		PID=2.1 ppm	ES							
		PID=1.3 ppm	ES							
	0.50	PID=1.1 ppm	ES			Silty CLAY, brown with orange mottling, high plasticity	M			
		PID=0.9 ppm	ES							
	1					END OF TEST PIT AT 1.00 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT NO.

TEST PIT ENVIRONMENTAL LOG

TP10

SHEET 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek EDD**	Date Completed:	**18/11/20**
Test Pit Location:	**Lot 4002 Eastern Creek Drive, Eastern Creek NSW 2766**	Recorded By:	**RZ**
Project Number:	**PS122970**	Log Checked By:	

Excavation Method: **Excavator**

Surface RL:

Co-ords: **N MGA64**

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m) AHD / DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
N F G W O		PID=1.8 ppm	ES			FILL: Gravelly CLAY, brown, low plasticity with shale gravels	D			No odour No ACM
		PID=1.9 ppm	ES							
	0.40	PID=1.6 ppm	ES			Sitly sandy CLAY, brown/orange, high plasticity	M			
	1					END OF TEST PIT AT 0.80 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.

Explanatory Notes - Engineering Logs

Engineering logs have been prepared in accordance with AS1726:2017 “Geotechnical Site Investigations” and as defined below.

DRILLING/EXCAVATION METHODS

Symbol	Term
AS	Auger Screwing
EX	Excavation
HA	Hand Auger
NMLC/HMLC	Diamond Core –triple tube
NQ/HQ/PQ	Diamond Core – wireline
PC	Percussion
PCB	Poly Carbonised Diamond Bit
PT	Push Tube
RAB	Rotary Air Blast
RC	Reverse Circulation
S	Sonic drill
VB	Vibrocoring
WB	Washbore with blade
WR	Washbore with roller (tricone)

SUPPORT

C Casing
M Drill mud
Nil No support

WATER

Partial water loss Water inflow

Complete water loss

Water level at date shown

NFGWO No Free Groundwater Observed
The observation of groundwater, whether present or not, was not possible due to drilling water, surface seepage or cave in of the borehole/test pit.

NFGWE No Free Groundwater Encountered
The borehole/test pit was dry soon after excavation. Inflow may have been observed had the borehole/test pit been left open for a longer period.

FIELD TEST (Soil borehole and test pit logs)

DM Dilatometer test
HB Hammer bounce
OT Other test (eg. plate load test)
PE Permeability test
PM Pressuremeter test
PP Pocket penetrometer
SPT Standard penetration test
SV Shear vane test

SAMPLE (Soil borehole and test pit logs)

B Bulk disturbed sample
D Disturbed sample
PT Push tube
SPT SPT sample
U50 Undisturbed sample in 50mm diameter tube
U75 Undisturbed sample in 75mm diameter tube

GRAPHIC LOG – see later

TOTAL CORE RECOVERY (Rock logs only)

$$TCR\ (\%) = \frac{\text{Length of core recovered}}{\text{Length of core run}} \times 100$$

ROCK QUALITY DESIGNATION (Rock logs only)

$$RQD\ (\%) = \frac{\sum \text{Length of sound core pieces} > 100\text{mm}}{\text{Length of core run}} \times 100$$

GROUP SYMBOL (Soil borehole and test pit logs)

Soils are classified to reflect their primary and significant secondary component/characteristic using the classification symbols described in AS1726-2017, summarised as follows.

Symbol	Major division	Typical names
GW, GP	GRAVEL	Gravel & gravel-sand mixtures, little/no fines
GM		Gravel-silt & gravel-sand-silt mixtures
GC		Gravel-clay & gravel-sand-clay mixtures
SW, SP	SAND	Sand & gravel-sand mixtures, little/no
SM		Sand-silt mixtures
SC		Sand-clay mixtures
ML	SILT & CLAY (low & medium plasticity)	Inorganic silt/clayey fine sand or silt
CL, CI		Inorganic clay, gravelly clay, sandy clay
OL		Organic silt
MH	SILT & CLAY (high plasticity)	Inorganic silt
CH		Inorganic clay, high plasticity
OH		Organic clay, med-high plasticity, organic silt
Pt	Highly organic soil	Peat, highly organic soil

FIELD DESCRIPTION

Soil and rock materials described to AS1726-2017. The description of percentage of cobbles and boulders in a soil may be limited by sample size.

MOISTURE CONDITION

Coarse grained soils and rocks
Dry (D), Moist (M) or Wet (W).
Estimated based on appearance and feel.

Cohesive soils

MC<PL	Moist, dry of plastic limit
MC≈PL	Moist, near plastic limit
MC>PL	Moist, wet of plastic limit
MC≈LL	Wet, near liquid limit
MC>LL	Wet, wet of liquid limit

Estimated based on judgement

COHESIVE SOILS - CONSISTENCY

The consistency of a cohesive soil is assessed by tactile means or field measurement of undrained shear strength.

A Hand Penetrometer may be used in the field or the laboratory to provide approximate assessment of unconfined compressive strength of cohesive soils (kPa) as follows:

Strength	Symbol	Indicative undrained shear strength (kPa)	Hand Penetrometer Reading (kPa)
Very Soft	VS	≤ 12	< 25
Soft	S	>12 and ≤ 25	25 to 50
Firm	F	> 25 and ≤ 50	50 to 100
Stiff	St	>50 and ≤ 100	100 to 200
Very Stiff	VSt	> 100 and ≤ 200	200 to 400
Hard	H	>200	> 400
Friable	Fr	-	-

COHESIONLESS SOILS - RELATIVE DENSITY

Relative density terms are used to describe silty and sandy material, and these are usually based on resistance to drilling penetration or the Standard Penetration Test (SPT) ‘N’ values.

The Standard Penetration Test (SPT) is carried out in accordance with AS 1289, 6.3.1. For completed tests the number of blows required to drive the split spoon sampler 300 mm is recorded as the N value. For incomplete tests the number of blows and the penetration beyond the seating depth of 150 mm are recorded. If the 150 mm seating penetration is not achieved the number of blows to achieve the measured penetration is recorded. SPT correlations may be subject to corrections for overburden pressure and equipment type.

Term	Symbol	Density Index	N Value (blows /0.3 m)	DCP (blows /100m
Very Loose	VL	0 to 15	0 to 4	0 to 1
Loose	L	15 to 35	4 to 10	1 to 2
Medium Dense	MD	35 to 65	10 to 30	2 to 5
Dense	D	65 to 85	30 to 50	5 to 10
Very Dense	VD	>85	>50	>10

SOIL STRUCTURE

Soil structure is described to AS 1726-2017 if visible and present.

SOIL / ROCK ORIGIN

The geological origin of the soil or rock is presented as an interpretation of the geological and geomorphological setting. Origin cannot be deduced on the basis of material appearance and properties alone and is therefore limited by the availability of supporting geological information

ROCK MATERIAL WEATHERING

Rock weathering is described mainly using the following abbreviations and definitions used in AS1726.

Term	Symbol	Definition
Residual soil	RS	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible.
Extremely weathered	XW	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are still visible.
Highly weathered	HW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognizable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Moderately weathered	MW	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognizable, but shows little or no change of strength from fresh rock.
Slightly weathered	SW	Rock is partially discoloured with staining or bleaching along joints but shows little or no change of strength from fresh rock.
Fresh	FR	Rock shows no sign of decomposition of individual minerals or colour changes.

If differentiation between highly and moderately weathered rock is not practicable, then Distinctly Weathered (DW) is used as defined in AS1726:2017.

INFERRED ROCK STRENGTH

Rock strength is inferred based on field assessment, Point Load Index or Uniaxial Compressive Strength as follows:

Term	Symbol	UCS (MPa)	Point Load Index $Is_{(50)}$ (MPa)
Very Low	VL	0.6 to 2	0.03 to 0.1
Low	L	2 to 6	0.1 to 0.3
Medium	M	6 to 20	0.3 to 1
High	H	20 to 60	1 to 3
Very High	VH	60 to 200	3 to 10
Extremely High	EH	>200	>10

● Diametral Point Load Index test

■ Axial Point Load Index test

DEFECT SPACING/BEDDING SPACING (Rock)

Measured at right angles to defects of same set or bedding.

Term	Defect Spacing	Bedding
Extremely closely spaced	<6 mm 6 to 20 mm	Thinly Laminated Laminated
Very closely spaced	20 to 60 mm	Very Thin
Closely spaced	0.06 to 0.2 m	Thin
Moderately widely spaced	0.2 to 0.6 m	Medium
Widely spaced	0.6 to 2 m	Thick
Very widely spaced	>2 m	Very Thick

DEFECT DESCRIPTION (Rock)

Symbol	Term	Symbol	Term
Bg	Bedding	DB	Drill Break
Pt	Parting	Se	Seam
Cn	Contact	SZ	Sheared Zone
Bd	Boundary	CZ	Crushed Zone
Jt	Joint	F	Fault
Fo	Foliation	Vn	Vein
C	Cleavage		

DEFECT ORIENTATION (Rock)

Dip measured relative to the horizontal plane in vertical boreholes and relative to core axis in inclined boreholes.

DEFECT ROUGHNESS AND SHAPE (Rock)

Roughness	Description	Roughness	Description
Sm	Smooth	Po	Polished
Ro	Rough	Sl	Slickensided
VRo	Very Rough		
Shape	**Description**	**Shape**	**Description**
Pl	Planar	Cu	Curved
Un	Undulating	Vu	Vuggy
Ir	Irregular	St	Stepped

COATING OR INFILLING (Rock)

Abbreviation	Description	Abbreviation	Description
Cln	Clean	Co	Coal
Cg	Coating	Cr	Crushed rock
In	infill	Fe	Limonite/ironstone
Sn	Stain	Fl	Feldspar
Vr	Veneer	Gp	Gypsum
Ca	Calcite	Mn	Manganese
Ch	Chlorite	Py	Pyrite
Cl	Clay	Qz	Quartz

Graphic Symbols — Soils and Rocks

Typical symbols for soils and rocks are as follows. Combinations of these symbols may be used to indicate mixed materials such as clayey sand.

SOIL SYMBOLS

Main components


CLAY


SILT


SAND


GRAVEL


BOULDERS / COBBLES


TOPSOIL


PEAT

Minor components


CLAYEY


SILTY


SANDY


GRAVELLY

OTHER MATERIAL SYMBOLS


FILL


BITUMEN


CONCRETE

ROCK SYMBOLS

Sedimentary Rocks


SANDSTONE


SILTSTONE


CLAYSTONE, MUDSTONE


SHALE


COAL


LIMESTONE


CONGLOMERATE

Igneous rocks


GRANITE


BASALT


UNDIFERENTIATED IGNEOUS

Metamorphic rocks


SLATE, PHYLLITE, SCHIST


GNEISS


QUARTZITE

Engineering Classification of Shales and Sandstones in the Sydney Region – A Summary Guide

The Sydney rock class classification system is based on rock strength, defect spacing and allowable seams as set out below. All three factors must be satisfied.

CLASSIFICATION FOR SANDSTONE

Class	Uniaxial Compressive Strength (MPa)	Defect Spacing (mm)	Allowable Seams (%)
I	>24	>600	<1.5
II	>12	>600	<3
III	>7	>200	<5
IV	>2	>60	<10
V	>1	N.A.	N.A.

CLASSIFICATION FOR SHALE

Class	Uniaxial Compressive Strength (MPa)	Defect Spacing (mm)	Allowable Seams (%)
I	>16	>600	<2
II	>7	>200	<4
III	>2	>60	<8
IV	>1	>20	<25
V	>1	N.A.	N.A.

UNIAXIAL COMPRESSIVE STRENGTH (UCS)

For expedience in field/construction situations the uniaxial (unconfined) compressive strength of the rock is often inferred, or assessed using the point load strength index (Is50) test (AS 4133.4.1 – 1993). For Sydney Basin sedimentary rocks the uniaxial compressive strength is typically about 20 x (Is50) but the multiplier may range from about 10 to 30 depending on the rock type and characteristics. In the absence of UCS tests, the assigned Sydney Rock Class classification may therefore include rock strengths outside the nominated UCS range.

DEFECT SPACING

The terms relate to spacing of natural fractures in NMLC, NQ and HQ diamond drill cores and have the following definitions:

Defect Spacing (mm)	Terms Used to Describe Defect Spacing[1]
>2000	Very widely spaced
600 – 2000	Widely spaced
200 – 600	Moderately spaced
60 – 200	Closely spaced
20 – 60	Very closely spaced
<20	Extremely closely spaced

[1] After ISO/CD14689 and ISRM

ALLOWABLE SEAMS

Seams include clay, fragmented, highly weathered or similar zones, usually sub-parallel to the loaded surface. The limits suggested in the tables relate to a defined zone of influence. For pad footings, the zone of influence is defined as 1.5 times the least footing dimension. For socketed footings, the zone includes the length of the socket plus a further depth equal to the width of the footing. For tunnel or excavation assessment purposes the defects are assessed over a length of core of similar characteristics.

Source: Based on Pells, P.J.N. Mostyn, G. and Walker, B.F. – Foundations on Sandstone and Shale in the Sydney Region. Australian Geomechanics Journal, No 33 Part 3, December 1998

BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH01

SHEET : 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek GI**	Date Completed:	**18/11/20**
Borehole Location:	**See site plan**	Recorded By:	**CTJ**
Project Number:	**PS122611**	Log Checked By:	

Drill Model/Mounting:	**Geoprobe 6712DT/ Track**	Hole Angle:	**-90°**	Surface RL:	
Borehole Diameter:	**110 mm**	Bearing:	**---**	Co-ords:	**E 299997 N 6257106 MGA94 56**

Borehole Information							Field Material Description						
METHOD	SUPPORT	WATER	RL (m AHD) / DEPTH (m)	FIELD TEST	SAMPLE	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	POCKET PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
AS	Nil	NFWGE	0.30		ES			FILL: Silty Sandy CLAY; low plasticity, grey-brown, fine to coarse grained sand, with fine to coarse grained angular to sub-angular gravel	<PL			FILL
				SPT 4, 4, 9 N=13	ES DS		CI-CH	Sandy CLAY; medium to high plasticity, brown, orange-brown, fine to coarse grained sand, trace fine to coarse grained sub-angular gravel 0.5 m: decrease in sand content, no gravel 0.8 m: becoming grey mottled red-brown	<PL - ~PL		300 280 350 400	ALLUVIAL SOIL
			1		ES						450	
			1.50	SPT 7, 13, 26 N=39	DS		CI	Silty CLAY; medium plasticity, pale orange-brown, grey, with fine to coarse grained sand	<PL		350 450	RESIDUAL SOIL
			1.90								500	
			2		ES		CI	SILTSTONE: extremely weathered, very low strength Recovered as Silty CLAY; medium plasticity, orange-brown, yellow-brown, red staining, trace fine to coarse grained sand, trace siltstone pieces	<PL			WEATHERED ROCK 1.95 m: Increase in drilling resistance
				SPT 29 HB N=R	DS			2.5 m: pale grey-brown, with red-orange staining			450	2.5 m: Poor SPT sample recovery
			3		ES							2.8-5.0 m: Consistency based on recovered material and drilling resistance
								3.8 m: with siltstone pieces				3.5 m: SPT not undertaken due to hard material
			4		ES			4.5 m: becoming grey, dark grey				4.5 m: SPT not undertaken due to hard material
			5		ES			END OF BOREHOLE AT 5.00 m Target depth				

This Borehole log should be read in conjunction with WSP's accompanying explanatory notes.

BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH02

SHEET : 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek GI**	Date Completed:	**18/11/20**
Borehole Location:	**See site plan**	Recorded By:	**CTJ**
Project Number:	**PS122611**	Log Checked By:	

Drill Model/Mounting:	**Geoprobe 6712DT/ Track**	Hole Angle:	**-90°**	Surface RL:	
Borehole Diameter:	**110 mm**	Bearing:	**---**	Co-ords:	**E 300035 N 6257030 MGA94 56**

Borehole Information							Field Material Description						
METHOD	SUPPORT	WATER	RL (m AHD) / DEPTH (m)	FIELD TEST	SAMPLE	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	POCKET PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
AS	Nil		0.50		ES		CI-CH	FILL: Sandy CLAY; medium to high plasticity, dark brown, fine to coarse grained sand, with fine to coarse grained angular to sub-angular gravel, rootlets	~PL			FILL
				SPT 2, 2, 3 N=5	ES DS		CI-CH	FILL: Sandy CLAY; medium to high plasticity, dark brown, orange-brown, fine to coarse grained sand, with fine to coarse grained, angular to sub-rounded gravel, trace roots	~PL		200 190 210	
			1		ES							
			1.60	SPT 1, 2, 3 N=5	DS		CI-CH	FILL: Silty Sandy CLAY; medium to high plasticity, dark black, green-grey, fine to coarse grained sand, trace fine to coarse grained, sub-angular gravel, rootlets, organic material	~PL		100 200 100	
			2		ES							
		▷	2.50	SPT 6, 5, 6 N=11	DS		CI-CH	Sandy Silty CLAY; medium to high plasticity, grey, orange-brown, brown, fine to coarse grained sand, trace fine to coarse grained, sub-angular gravel	~PL - >PL		320 410 300 470	2.5 m: Possible water strike. Water rose to surface at completion of drilling ALLUVIAL SOIL
			3.00 3		ES		CH	Sandy CLAY; high plasticity, orange-brown mottled grey, fine to coarse grained sand	>PL			
			3.50	SPT 2, 4, 4 N=8	DS		SC	Clayey Silty SAND; fine to medium grained, grey, orange-brown, high plasticity clay fines	W		150 150 150	
			4.00 4		ES		CH	Silty CLAY; high plasticity, orange-brown, grey, trace fine to coarse grained sand	>PL			RESIDUAL SOIL
			4.60	SPT 25/100mm HB N=R	DS		CI-CH	SILTSTONE; extremely weathered, very low strength Recovered as Silty CLAY; medium to high plasticity, pale grey-brown	~PL		210	4.5 m: Poor SPT sample recovery WEATHERED ROCK
			5		ES			END OF BOREHOLE AT 5.00 m Target depth				

This Borehole log should be read in conjunction with WSP's accompanying explanatory notes.

BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH03

SHEET : 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek GI**	Date Completed:	**18/11/20**
Borehole Location:	**See site plan**	Recorded By:	**CTJ**
Project Number:	**PS122611**	Log Checked By:	

Drill Model/Mounting:	**Geoprobe 6712DT/ Track**	Hole Angle:	**-90°**	Surface RL:	
Borehole Diameter:	**110 mm**	Bearing:	**---**	Co-ords:	**E 300000 N 6256976 MGA94 56**

Borehole Information							Field Material Description					
METHOD	SUPPORT	WATER	RL (m AHD) / DEPTH (m)	FIELD TEST	SAMPLE	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	POCKET PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
AS	Nil	NFWGE			ES		CI	FILL: Sandy CLAY; medium plasticity, dark brown, orange-brown, grey, fine to coarse grained sand, with fine to coarse grained, sub-angular gravel, roots	<PL			FILL
			0.60	SPT 3, 3, 6 N=9	ES DS		CI	Silty Sandy CLAY; medium plasticity, grey, red, red-brown, fine to coarse grained sand, trace fine to coarse grained, angular to sub-angular gravel	<PL		240 360	ALLUVIAL SOIL
			1.00 1		ES		CI	Sandy CLAY, medium plasticity, red, red-brown, fine to coarse grained sand	<PL			
			1.50	SPT 4, 5, 8 N=13	DS		SM	Silty Clayey SAND; fine to coarse grained, pale white, grey, red-brown streaks, low to medium plasticity fines, trace fine to coarse grained, sub-angular gravel	D - M		310 310 420	
			2.00 2		ES		CI	Silty CLAY; medium plasticity, red-brown, with fine to coarse grained sand	<PL			RESIDUAL SOIL
			2.80	SPT 6, 14, 25/100mm HB N=R	DS		CI	SILTSTONE; extremely weathered, very low strength Recovered as Silty CLAY; medium plasticity, grey-brown, red-brown, with fine to coarse grained sand	<PL		550 400 >600	WEATHERED ROCK 3.0-5.0 m: Consistency based on recovered material and drilling resistance 3.5 m: No SPT undertaken due to hard material 4.5 m: No SPT undertaken due to hard material
			3		ES							
			4		ES							
			5		ES			END OF BOREHOLE AT 5.00 m Target depth				

This Borehole log should be read in conjunction with WSP's accompanying explanatory notes.

BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH04

SHEET : 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek GI**	Date Completed:	**18/11/20**
Borehole Location:	**See site plan**	Recorded By:	**CTJ**
Project Number:	**PS122611**	Log Checked By:	

Drill Model/Mounting:	**Geoprobe 6712DT/ Track**	Hole Angle:	**-90°**	Surface RL:	
Borehole Diameter:	**110 mm**	Bearing:	**---**	Co-ords:	**E 299899 N 6256996 MGA94 56**

Borehole Information						Field Material Description						
METHOD	SUPPORT	WATER	RL (m AHD) / DEPTH (m)	FIELD TEST	SAMPLE	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	POCKET PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
AS	Nil	NFWGE	0.10		ES		CL	TOPSOIL: Sandy CLAY; low plasticity, dark brown, black, fine to coarse grained sand, rootlets	<PL			TOPSOIL Grass at surface
							CI	FILL: Sandy CLAY; medium plasticity, dark brown, fine to coarse grained sand, trace fine to coarse grained, sub-angular gravel, trace rootlets	<PL			FILL
			0.50	SPT 3, 4, 5 N=9	ES DS		CI	Sandy CLAY; medium plasticity, orange-brown, brown, fine to coarse grained sand, trace fine to coarse grained, sub-angular gravel	<PL		300 290 310	ALLUVIAL SOIL
			1		ES							
				SPT 4, 5, 6 N=11	DS			1.9 m: no gravel			410 250 500	
			2.00 2		ES		CI-CH	CLAY; medium to high plasticity, with fine to coarse grained sand	<PL - ~PL			
			2.50	SPT 4, 6, 9 N=15	DS		CI-CH	Silty Sandy CLAY; medium to high plasticity, dark orange-brown mottled grey, fine to coarse grained sand, trace siltstone pieces	<PL		230 400	RESIDUAL SOIL
			3		ES			2.8 m: increase in sand content			380	
			3.20	SPT 23/70mm HB N=R	DS		CI	SILTSTONE; extremely weathered, very low strength Recovered as Silty CLAY; medium plasticity, pale grey, brown, with fine to coarse grained sand, with siltstone pieces	<PL			WEATHERED ROCK 3.6-5.0 m: Consistency based on recovered material and drilling resistance
			4		ES			4.0 m: becoming pale orange-brown, brown				
								4.4 m: increase in clay content				4.5 m: No SPT undertaken due to hard material
			5		ES			END OF BOREHOLE AT 5.00 m Target depth				

This Borehole log should be read in conjunction with WSP's accompanying explanatory notes.

BOREHOLE ENGINEERING LOG

BOREHOLE NO.

BH05

SHEET : 1 OF 1

Client:	**Charter Hall**	Date Commenced:	**18/11/20**
Project:	**Eastern Creek GI**	Date Completed:	**18/11/20**
Borehole Location:	**See site plan**	Recorded By:	**CTJ**
Project Number:	**PS122611**	Log Checked By:	

Drill Model/Mounting:	**Geoprobe 6712DT/ Track**	Hole Angle:	**-90°**	Surface RL:	
Borehole Diameter:	**110 mm**	Bearing:	**---**	Co-ords:	**E 299906 N 6257115 MGA94 56**

Borehole Information						Field Material Description						
METHOD	SUPPORT	WATER	RL (m AHD) / DEPTH (m)	FIELD TEST	SAMPLE	GRAPHIC LOG	GROUP SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY / CONSISTENCY (VS S F ST VST H / FB VL L MD D VD)	POCKET PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
AS	Nil	NFWGE	0.10		ES		CL	TOPSOIL: Sandy CLAY; low plasticity, dark brown, black, fine to coarse grained sand, rootlets	<PL			TOPSOIL
							CL-CI	FILL: Sandy CLAY; low to medium plasticity, dark brown, orange-brown, fine to coarse grained sand, trace fine to coarse grained, sub-angular gravel	<PL			FILL
					ES						380	
				SPT 3, 4, 6 N=10	DS						400	
											350	
			1.00 1		ES		CI	Silty CLAY; medium plasticity, grey, orange-brown, with fine to coarse grained sand, trace black inclusions	<PL			RESIDUAL SOIL
				SPT 4, 14, 27 N=41	DS			1.7 m: increase in sand content			400	
			1.95 2		ES		CI	SILTSTONE; extremely weathered, very low strength Recovered as Silty CLAY; medium plasticity, pale grey-brown, trace fine to coarse grained sand, with siltstone pieces	<PL		410	WEATHERED ROCK 1.95 m: Very high drilling resistance
				SPT 31 HB N=R	DS						>600	2.5 m: Poor SPT sample recovery (no sample taken)
								END OF BOREHOLE AT 2.65 m Practical Refusal				

This Borehole log should be read in conjunction with WSP's accompanying explanatory notes.

APPENDIX E

PHOTO LOG

PHOTOGRAPHIC LOG
Phase I and Phase II EDD

Client Name	Site Location	Project No.
Charter Hall	Lot 4002, Eastern Creek Drive, Eastern Creek NSW 2766	PS122611

Photo No.	Date
1	05/11/20

Description

Building located on adjacent block on the western Site boundary.

Photo No.	Date
2	05/11/20

Description

Underground infrastructure installation and materials currently stored on the Site.

PHOTOGRAPHIC LOG
Phase I and Phase II EDD

Client Name	Site Location	Project No.
Charter Hall	Lot 4002, Eastern Creek Drive, Eastern Creek NSW 2766	PS122611

Photo No.	Date
3	05/11/20

Description

Temporary access road constructed on the Site.

Photo No.	Date
4	05/11/20

Description

Facing north from Eastern Creek Drive.

PHOTOGRAPHIC LOG
Phase I and Phase II EDD

Client Name	Site Location	Project No.
Charter Hall	Lot 4002, Eastern Creek Drive, Eastern Creek NSW 2766	PS122611

Photo No.	Date
5	05/11/20

Description

Earthworks occurring at the Site.

Photo No.	Date
6	18/11/20

Description

Stockpile SP03.

PHOTOGRAPHIC LOG
Phase I and Phase II EDD

Client Name	Site Location	Project No.
Charter Hall	Lot 4002, Eastern Creek Drive, Eastern Creek NSW 2766	PS122611

Photo No.	Date
7	18/11/20

Description

Redevelopment works occurring at the Site.

Photo No.	Date
8	18/11/20

Description

Example test pit.

PHOTOGRAPHIC LOG
Phase I and Phase II EDD

Client Name	Site Location	Project No.
Charter Hall	Lot 4002, Eastern Creek Drive, Eastern Creek NSW 2766	PS122611

Photo No.	Date
9	18/11/20

Description

Test pit TP2 profile.

APPENDIX F

HISTORICAL AERIAL PHOTOGRAPHS

HISTORICAL AERIAL PHOTO LOG

Client Name	Site Location	Project No.
Charter Hall	Eastern Creek Drive, Eastern Creek NSW	PS126970

Photo No.	Date
1	1965

Description

1965 historical aerial photograph

Photo No.	Date
2	1975

Description

1975 historical aerial photograph

HISTORICAL AERIAL PHOTO LOG

Client Name	Site Location	Project No.
Charter Hall	Eastern Creek Drive, Eastern Creek NSW	PS126970

Photo No.	Date
3	1978

Description

1978 historical aerial photograph

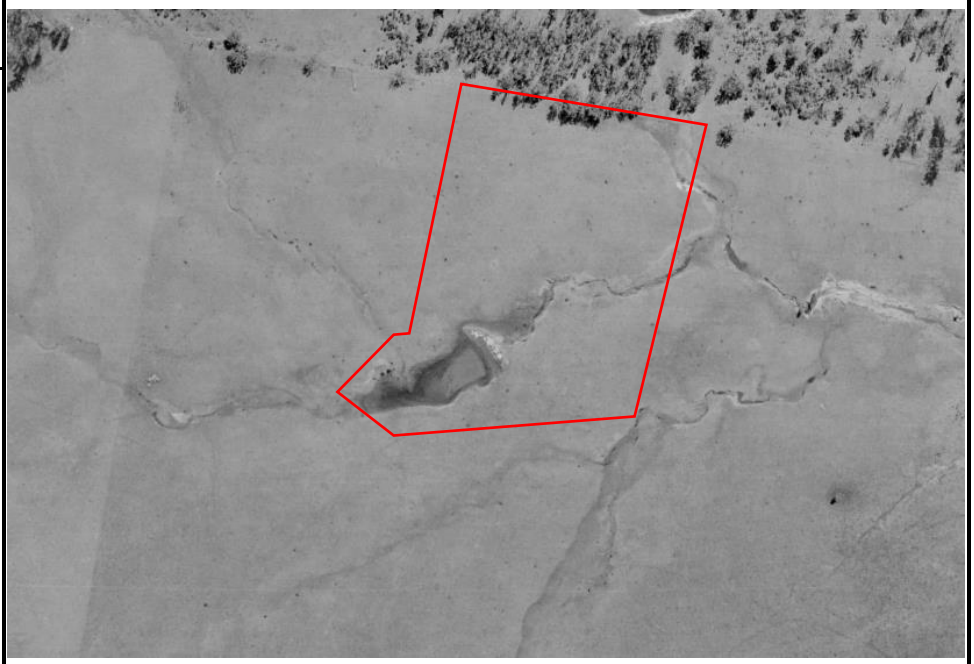
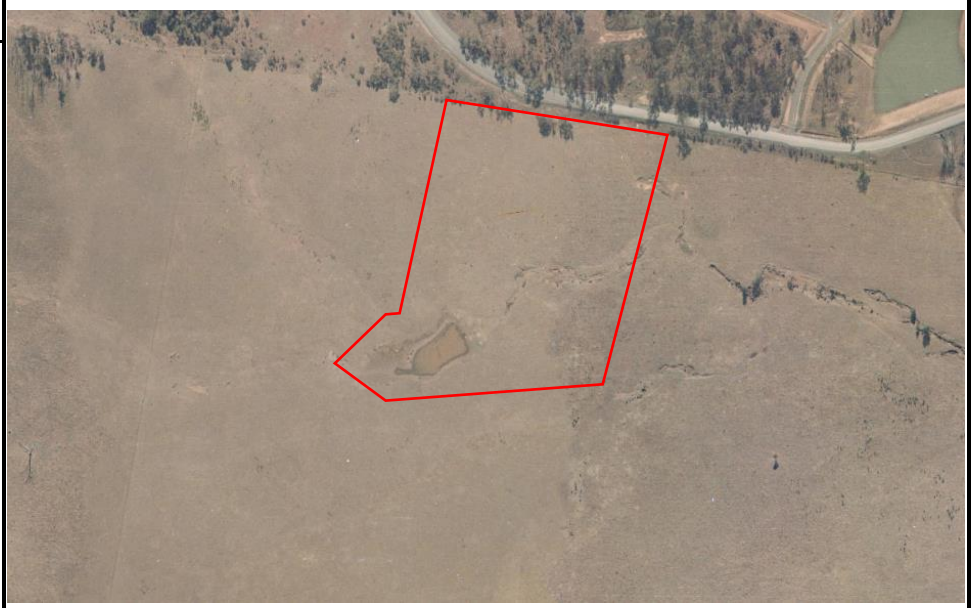


Photo No.	Date
4	1986

Description

1986 historical aerial photograph



	HISTORICAL AERIAL PHOTO LOG	
Client Name Charter Hall	**Site Location** Eastern Creek Drive, Eastern Creek NSW	**Project No.** PS126970

Photo No.	**Date**
5	1991

Description

1991 historical aerial photograph

Photo No.	**Date**
6	2004

Description

2004 historical aerial photograph

	HISTORICAL AERIAL PHOTO LOG	
Client Name Charter Hall	**Site Location** Eastern Creek Drive, Eastern Creek NSW	**Project No.** PS126970

Photo No.	**Date**
7	2009

Description

2009 historical aerial photograph

Photo No.	**Date**
8	2014

Description

2014 historical aerial photograph

	HISTORICAL AERIAL PHOTO LOG	
Client Name Charter Hall	**Site Location** Eastern Creek Drive, Eastern Creek NSW	**Project No.** PS126970

Photo No.	**Date**
9	2018

Description

2018 historical aerial photograph

Photo No.	**Date**
10	August 2020

Description

August 2020 historical aerial photograph

HISTORICAL AERIAL PHOTO LOG

Client Name	Site Location	Project No.
Charter Hall	Eastern Creek Drive, Eastern Creek NSW	PS126970

Photo No.	Date
11	October 2020

Description

October 2020 historical aerial photograph

Appendix C Photolog

Photo 1: Site overview looking north

Photo 2: Raised area in the north west of the site.

Photo 3: Raised area in the south west of the site

Photo 4: Earth bund and swale running east-west along the southern boundary of site.

Source:

Rev	Description	Drn.	Date
	Original Issue -		

JBS&G **Appendix:** A

Client: Tactical Group

Project: Charter Hall Eastern Creek

Job No: 62144 File Name: 4 November 2021

Photo 5: Small anthropogenic stockpile (gravels)

Photo 6: Organic matter stockpile in the north of site.

Photo 7:ATF fence along the eastern boundary.

Photo 8: Ste overview looking south.

Source:

Rev	Description	Drn.	Date
	Original Issue -		

JBS&G **Appendix:** A

Client: Tactical Group

Project: Charter Hall Eastern Creek

Job No: 62144 File Name: 4 November 2021

Appendix D NSW EPA Database Searches

Public registers

+ POEO Public Register
– Contaminated land record of notices
About the record of notices
List of notified sites
Tips for searching
Disclaimer
Dangerous goods licences
Pesticide licences
Radiation licences

Search results

Your search for: Suburb: EASTERN CREEK

Search Again Refine Search

did not find any records in our database.

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

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

Search TIP

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

... more search tips

More information about particular sites may be available from:

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

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

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

4 November 2021

Number	Name	Location	Type	Status	Issued date
1586045		Unit 2, 1A Raffles Glade, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	10-Oct-19
1590361		1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	25-Jun-20
1596664		Honeycomb Drive, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Pending	29-Jun-20
1600664		Honeycomb Drive, EASTERN CREEK, NSW 2766	s.80 Surrender of a Licence	Issued	2-Oct-20
1609070		Unit 2, 1A Raffles Glade, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	24-Jun-21
12454	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	3 ALSPEC PLACE, EASTERN CREEK, NSW 2766	POEO licence	Issued	24-May-06
1093363	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	3 ALSPEC PLACE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	15-Jun-09
1526973	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	3 ALSPEC PLACE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	28-Apr-15
1537603	ALUMINIUM SPECIALTIES GROUP PTY. LTD.	3 ALSPEC PLACE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	2-Feb-16
21070	CLEANAWAY PTY LTD	Unit 2, 1A Raffles Glade, EASTERN CREEK, NSW 2766	POEO licence	Issued	31-Aug-18
1574122	CLEANAWAY PTY LTD	Unit 2, 1A Raffles Glade, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	31-Jan-19
1603492	CLEANAWAY PTY LTD	Unit 2, 1A Raffles Glade, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	16-Dec-20
13426	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	POEO licence	Issued	2-Mar-12
20121	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	POEO licence	Issued	8-Jun-12
1508182	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	31-Aug-12
3085765569	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	10-Sep-12
3085766146	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	4-Oct-12
1509249	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	15-Nov-12
1508582	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	21-Dec-12
1510881	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	24-Dec-12
1511947	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	Compliance Audit	Complete	11-Feb-13
1512149	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	4-Jul-13
1515838	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	11-Oct-13
1519395	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	5-Jun-14
1532263	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	24-Sep-15
1534175	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	6-Oct-15
1549945	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	s.91 Clean Up Notice	Issued	21-Mar-17
3085781500	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	19-May-17
1548441	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	12-Apr-18
1535829	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	22-Aug-18
1568885	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.91 Clean Up Notice	Issued	24-Aug-18
1569556	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.110 Variation of Clean Up Notice	Issued	18-Sep-18
1570713	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.110 Variation of Clean Up Notice	Issued	15-Nov-18
1557001	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	s.110 Variation of Clean Up Notice	Issued	21-Nov-18

1577866	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	Compliance Audit	Complete	29-Mar-19
1575668	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	7-Jun-19
1595139	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	25-Jun-20
3500173	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.91 Clean Up Notice	Issued	23-Apr-21
1608782	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	7-May-21
1612304	DIAL-A-DUMP (EC) PTY LTD	1 KANGAROO AVENUE, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	10-Sep-21
3173530690	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	15-Oct-21
3173530728	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	15-Oct-21
1613554	DIAL-A-DUMP (EC) PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	Compliance Audit	Complete	18-Oct-21
11798	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	POEO licence	Issued	14-Feb-03
1046507	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.91 Clean Up Notice	Issued	18-Apr-05
1062807	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.96 Prevention Notice	Issued	20-Jul-06
1090374	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	28-Oct-08
1095159	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	26-Nov-08
1119497	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	29-Oct-10
3085764880	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	27-Jul-12
1508285	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	27-Aug-12
1509935	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Compliance Audit	Complete	5-Nov-12
1511570	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	4-Feb-13
1517265	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	23-Oct-13
1532261	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	20-Aug-15
3173523110	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	22-Aug-17
1570762	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	16-Jan-19
1594025	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	23-Apr-20
1594526	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	1-May-20
1594534	EASTERN CREEK OPERATIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	1-May-20
10042	EDL LFG (NSW) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766	POEO licence	Issued	8-Nov-00
1519416	EDL LFG (NSW) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	29-May-14
1536889	EDL LFG (NSW) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	30-Dec-15
1582694	EDL LFG (NSW) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	20-Aug-19
1035369	EDL OPERATIONS (EASTERN CREEK) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	27-May-04
1038985	EDL OPERATIONS (EASTERN CREEK) PTY LTD	WALLGROVE ROAD , EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	19-Jul-04
494	FULTON HOGAN INDUSTRIES PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	POEO licence	Surrendered	25-Feb-00
1538323	FULTON HOGAN INDUSTRIES PTY LTD	Honeycomb Drive, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	4-Apr-17

21414	FULTON HOGAN INDUSTRIES PTY LTD	LOT 2 DP 1145808 H/N ARCHBOLD ROAD, EASTERN CREEK, NSW 2766	POEO licence	Issued	6-Aug-20
1612945	FULTON HOGAN INDUSTRIES PTY LTD	LOT 2 DP 1145808 H/N ARCHBOLD ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	18-Oct-21
1031409	GLOBAL RENEWABLES LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	9-Oct-03
5073	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	POEO licence	Surrendered	2-Nov-00
1028278	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	27-Jun-03
1028667	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	12-Nov-03
1035853	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	18-Jun-04
1041638	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	26-Nov-04
1057995	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	27-Apr-06
1101636	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	11-Sep-09
1503085	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	18-Jan-12
1524875	HANSON CONSTRUCTION MATERIALS PTY LTD	Off Wallgrove Road, EASTERN CREEK, NSW 2766	s.80 Surrender of a Licence	Issued	18-Feb-15
11509	INTERNATIONAL THEME PARK PTY LTD	100 Wallgrove Road, EASTERN CREEK, NSW 2766	POEO licence	Surrendered	2-Oct-01
1039330	INTERNATIONAL THEME PARK PTY LTD	100 Wallgrove Road, EASTERN CREEK, NSW 2766	s.80 Surrender of a Licence	Issued	13-Aug-04
12569	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766	POEO licence	Issued	26-Feb-07
1090128	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	14-Jul-08
1096909	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	2-Feb-09
1109769	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	4-Mar-10
1600206	LMS ENERGY PTY LTD	Ferrers Road, EASTERN CREEK, NSW 2766	Compliance Audit	Complete	11-Sep-20
7119	NSW ELECTRICITY NETWORKS OPERATIONS PTY LIMITED	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766	POEO licence	Issued	26-Jun-00
1536632	NSW ELECTRICITY NETWORKS OPERATIONS PTY LIMITED	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	16-Dec-15
12517	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	POEO licence	Issued	17-Aug-06
3085769510	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	15-Mar-13
1514356	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	30-May-13
3085774167	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	9-Jul-14
1533413	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.91 Clean Up Notice	Issued	10-Sep-15
1531277	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	27-Nov-15
3085779108	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	22-Apr-16
1540816	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	28-Oct-16
1546201	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	1-Nov-16
1548504	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	8-Dec-17
1559600	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	11-Dec-17
1607424	SUEZ RECYCLING & RECOVERY PTY LTD	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	9-Jun-21
1005521	TRANSGRID	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	12-Apr-01

1049362	TRANSGRID	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	3-Jul-05
1093431	TRANSGRID	200 OLD WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	9-Apr-09
5272	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	POEO licence	Issued	12-Apr-01
1009091	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	16-Aug-01
1035365	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	31-Mar-04
1036651	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	19-May-04
1039725	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	13-Aug-04
1040691	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	27-Sep-04
1042368	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	23-Nov-04
1043618	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	4-Mar-05
1049661	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	11-Jul-05
1052652	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	10-Oct-05
1055257	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	13-Jan-06
1056309	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	1-Mar-06
1063015	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	17-Aug-06
1064136	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	2-Sep-06
1068218	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	21-Dec-06
1071951	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	3-Apr-07
1073175	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	15-May-07
1076667	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	3-Aug-07
1079324	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	17-Jan-08
1088949	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	12-Aug-08
1092283	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	4-Nov-08
1095397	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	19-Dec-08
1096866	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	16-Jan-09
1101389	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	23-Jun-09
1108193	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	30-Oct-09
1109544	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	9-Dec-09
1115192	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.91 Clean Up Notice	Issued	18-Jun-10
1112667	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	20-Jan-11
1504832	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	4-May-12
3085763634	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	4-May-12
3085764871	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	Penalty Notice	Issued	27-Jul-12
1508290	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	27-Aug-12

1511019	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	9-Jan-13
1511796	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	4-Mar-13
1537731	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	17-Feb-16
1539324	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	6-May-16
1548928	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	1-Feb-17
1606742	WASTE ASSETS MANAGEMENT CORPORATION	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	22-Apr-21
1093108	WSN ENVIRONMENTAL SOLUTIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	14-Nov-08
1104517	WSN ENVIRONMENTAL SOLUTIONS PTY LIMITED	WALLGROVE ROAD, EASTERN CREEK, NSW 2766	s.58 Licence Variation	Issued	20-Jan-11

Appendix E EPA Per- and Poly- Fluoroalkyl Register

The NSW Government PFAS Investigation Program

View a map of the sites in NSW that may be contaminated with PFAS, learn how to reduce your exposure to these dangerous chemicals, and read about our investigation of the issue.

The EPA is leading an investigation program to assess the legacy of PFAS use across NSW. With the assistance of the NSW PFAS Technical Advisory Group, which includes NSW Health, Department of Primary Industries and the Office of Environment and Heritage, we provide impacted residents with tailored, precautionary dietary advice to help them reduce any exposure to PFAS.

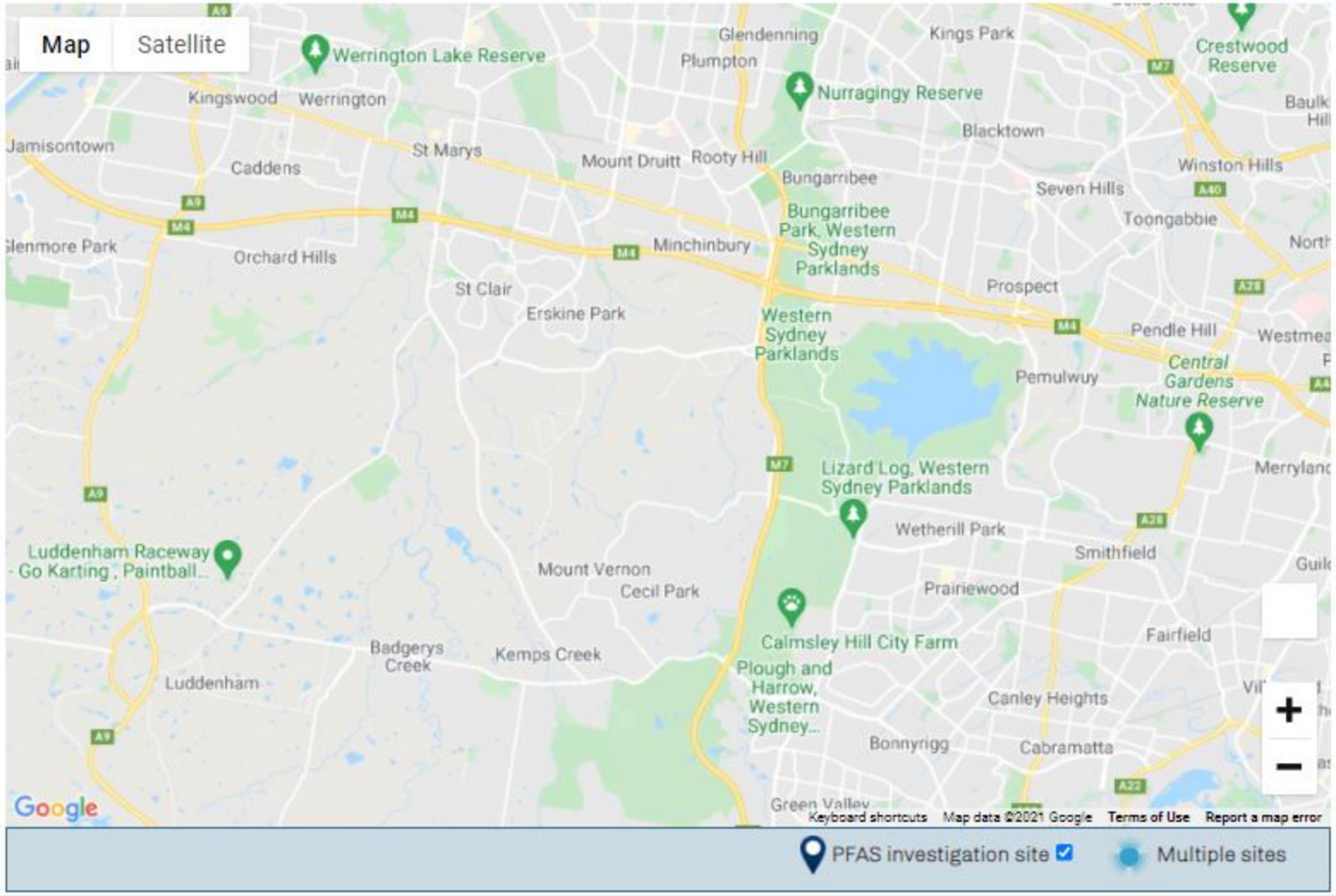
Current investigations are focused on sites where it is likely that large quantities of PFAS have been used. The EPA is currently investigating PFAS at these sites:

Map view | List view

Filter by: No filter set

Showing 0 of 49 sites

Reset map



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