Appendix D

Detailed Site Investigation and Assessment

Broken Hill Battery Energy Storage System Project

Detailed Site Investigation & Assessment Report

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Detailed Site Investigation & Assessment Report

Client: AGL Energy Limited

ABN: 74 115 061 375

Prepared by

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21-May-2021

Job No.: 60619153

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Quality Information

Document Broken Hill Battery Energy Storage System Project

Ref REV0

Date 21-May-2021

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Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	21-May-2021	Final	William Miles (CEnvP IA Technical Director – Environment)	

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Executive Summary

AECOM Australia Pty Ltd (AECOM) has been engaged by AGL Energy Limited (AGL) to prepare an Environmental Impact Statement (EIS) to assist with obtaining development consent to construct, operate and maintain a battery energy storage system (BESS) facility with a capacity of approximately 50 megawatts (MW) and up to 100 megawatt-hour (MWh) at Broken Hill (hereafter referred to as 'the Project'), NSW.

The Project is classified as State Significant Development (SSD). As such, this Detailed Site Investigation and Assessment (DSI & Assessment) has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) which guide the preparation of the EIS to support the SSD application for the Project under Division 4.7 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Site is located at 74-80 Pinnacles Place (hereafter referred to as 'the Site') on the following land parcels:

- Lot 57 Deposited Plan (DP) 258288; and
- Lot 58 DP 258288.

A transmission line is proposed to connect the Site to the nearby TransGrid Broken Hill substation. This transmission line would cross Part Lot 7302 DP 1181129 and Lot 2 DP 1102040 (the same lot as the TransGrid Broken Hill substation).

The Project Area includes both the Site (Lot 57 DP 258288 and Lot 58 DP 258288), and the transmission line corridor (part of Lot 7302 DP 1181129 and part of Lot 2 DP 1102040). The Project Area is shown in **Figure 1-2** of the Environmental Impact Statement.

A desktop review of the Project Area was completed to understand the existing ground conditions and the likely level of assessment required. This desktop assessment was informed by various database searches, aerial photos, site photos and site walkovers. During this assessment it was identified that different parts of the Project Area presented different levels of contamination risk.

The Site has been used for the storage of wastes and machinery and therefore could potentially be contaminated. As such a DSI and Assessment was completed for the Site that involved ground investigations.

Given that the final location of the transmission line would be determined during detailed design, and as the areas where disturbance would occur are limited (e.g. transmission line poles), AECOM did not inspect or collect samples from Part Lot 7302 DP 1181129 or Lot 2 DP 1102040 as part of this DSI & Assessment. Therefore a desktop assessment was completed for the other parts of the Project Area given the low likelihood of contamination and the minimal intrusive works proposed. Assessment of these areas is included in **Chapter 11.0 Soils, groundwater and contamination** of the Environmental Impact Statement.

The objective of this DSI & Assessment is to identify and document contaminants of potential concern (CoPC) to inform future development works at the Site and evaluate if there is a requirement for further assessment and/or management.

As part of the DSI & Assessment, AECOM undertook the following two tasks:

- a desktop review of available background/historical information and development of a preliminary conceptual site model (CSM);
- a soil investigation which involved drilling at six borehole locations and sub surface sampling at 'Tank' locations where staining and odours were observed. Soil samples were collected and analysed for pH, cation exchange capacity (CEC) (to calculate specific ecological investigation levels [EILs] for selected heavy metals), heavy metals (arsenic [As], copper [Cu], cadmium [Cd], chromium [Cr], lead [Pb], nickel [Ni], mercury [Hg], zinc [Zn]), total recoverable hydrocarbons (TRH) and total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs) and asbestos. Analytical results were compared to the adopted soil assessment criteria

for commercial/industrial land use, New South Wales Environment Protection Authority (NSW EPA) 2014 waste classification guidelines and NSW EPA (2014) Excavated Natural Material (ENM) order; and

- following assessment of the soil analytical results, the CSM was updated based on the findings to assess potential risk to human health and ecological receptors in a commercial/industrial setting.

The desktop study identified that the Site has been vacant until sometime between 2005 and 2010, from which time the Site has been used for storage of various equipment and building materials. It is understood that the Site is currently being used for storage by a tenant.

A Site inspection conducted by AECOM on 14 January 2021 indicated the presence of waste materials such as metal, wood and tyre waste, and infrastructure including truck drop trailers. The Site was also used for storage of vehicle fuels and oils in intermediate bulk containers (IBCs), drums and jerry cans, some of which had spilled onto surface soils. Two stockpiles were visible on Site, the material appeared to be similar to that encountered in boreholes and no observations of contamination were made for the surface of the stockpiles.

Based on the soil investigation completed and assessment of the soil analytical data, there are localised petroleum hydrocarbon impacts in surface and subsurface soils that preclude the suitability of the Site for commercial/industrial land use; however, the Site could be made suitable following remedial works recommended further below.

It is noted that no groundwater was encountered during the soil investigation to a maximum depth of 8 m bgl.

Based on the updated CSM, there are complete pathways from direct contact with petroleum hydrocarbon impacted surface soils by on-site commercial and intrusive maintenance workers and ecological receptors within the vicinity of the Tank sample location in the southern part of the Site. There is also potential for leaching of soil contaminants to surface water during heavy rainfall and off-site migration by overland flow to the ephemeral creek east of the Site. However, it is considered that total recoverable hydrocarbons (TRH) would volatilise and degrade over this distance and is therefore unlikely to present a risk to off-site human health and ecological receptors.

AECOM recommends the following works to make the Site suitable for its proposed land use:

- Preparation of a Remedial Action Plan (RAP) in accordance with *State Environmental Planning Policy No 55-Remediation of Land*, for the excavation of localised petroleum hydrocarbon impacted material within the vicinity of the IBC at the southern boundary. The stained and odorous soils were identified in the vicinity of AECOM sample location ‘Tank’ (observed to comprise an area of 1 m x 0.5 m x 0.5 m = 0.25 m^3) and currently precludes the suitability of the Site for the proposed commercial/industrial land use.
- Preparation of a Construction Environmental Management Plan (CEMP) incorporating an unexpected finds procedure for implementation encompassing all construction activities associated with the Project.
- In the event that material is required to be taken off-site for installation of the proposed transmission poles (off-site within the TransGrid Broken Hill Substation, not assessed as part of this DSI & Assessment), then collection of samples of material to allow for waste classification in accordance with NSW EPA Waste Classification Guidelines Part 1: Classifying Waste, dated November 2014.
- Removal and appropriate disposal of any on-site waste in accordance with the CEMP and relevant NSW waste legislation.
- Preparation of waste classification letter(s) to allow for materials to be disposed off-site to a licensed landfill in accordance with NSW EPA guidelines (e.g. material from the Tank excavation area and materials surplus to Site requirements including the two stockpiles observed during the Site inspection) (if required).

List of Acronyms

Term	Description
ACM	Asbestos Containing Material(s)
AECOM	AECOM Australia Pty Ltd
AMO	Automatic Meteorology Observations
ASC NEPM	National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended (2013)
ASS	Acid Sulfate Soils
AST	Above-ground Storage Tank
BOM	Bureau of Meteorology
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene
CEMP	Construction Environment Management Plan
CLM Act	*Contaminated Land Management Act 1997*
CoPC	Contaminants of Potential Concern
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CSM	Conceptual Site Model
DECC	NSW Government Department of Environment and Climate Change
DP	Deposited Plan
DPIE	NSW Government Department of Planning, Industry and Environment
DQI	Data Quality Indicators
DQO	Data Quality Objective
DSI	Detailed Site Investigation
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999*
EPI	Environmental Planning Instrument
EPL	Environment Protection Licence
ESA	Environmental Site Assessment
GDA94	Geocentric Datum of Australia 1994
GPS	Global Positioning System
HAZMAT	Hazardous Materials Assessment
LEP	Local Environment Plan
LGA	Local Government Area
m AHD	metres Australian Height Datum
m bgl	metres below ground level
m bgs	metres below ground surface
NEPC	National Environment Protection Council

Term	Description
NEPM	National Environment Protection Measure
NOW	New South Wales Office of Water
NSW	New South Wales
OHS	Occupation Health and Safety
OCPs	Organochlorine Pesticides
OPPs	Organophosphorus Pesticides
PAHs	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PEPs	Protection of the environment policies
PFAS	Per- and Poly-Fluoroalkyl Substances
POEO Act	*Protection of the Environment Operations Act 1997*
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environment Planning Policy
SSD	State Significant Development
SUEZ	SUEZ Recycling and Recovery Pty Ltd
SVOCs	Semi-volatile Organic Compounds
SWL	Standing Water Level
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UBD	Universal Business Directory
UPSS	Underground Petroleum Storage System
UXO	Unexploded Ordnance
VOCs	Volatile Organic Compounds
WHS Act	*Work Health and Safety Act 2011*, as amended 2016

Units of Measurement			
mm	millimetre	m	metre
ha	hectare	km	kilometre
%	percent	ºC	degree centigrade

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) has been engaged by AGL Energy Limited (AGL) to prepare an Environmental Impact Statement (EIS) to assist with obtaining development consent to construct, operate and maintain a battery energy storage system (BESS) with a capacity of approximately 50 megawatts (MW) and up to 100 megawatt-hour (MWh) at Broken Hill (hereafter referred to as 'the Project'), NSW. The proposed site for the Project is described in **Section 1.1** below.

The Project is classified as State Significant Development (SSD). As such, this Detailed Site Investigation and Assessment (DSI & Assessment) has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) for the Project (refer to **Section 1.3.2** for a summary of how the SEARs relevant to this report have been addressed). The SEARs guide the preparation of the EIS to support the SSD application for the Project under Division 4.7 of Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

1.1 Project context and overview

The Project comprises a BESS with a capacity of approximately 50 MW and up to 100 MWh. Key features of the Project include:

- Construction and operation of a BESS; and
- Connection of the BESS facility to the nearby TransGrid Broken Hill substation via a 22 kV above-ground powerline connecting through a 22 kV busbar at the substation.

The Project would be generally comprised of the following components:

- Lithium-ion (Li-ion) batteries inside battery enclosures
- Inverters
- Medium voltage transformers up to 22 kV
- Cabling and collector units
- Connection to an existing 22 kV electrical switchyard including minor works to connect the BESS to the TransGrid Broken Hill substation
- Temporary site office and then a permanent control and office building
- Asset Protection Zone (APZ)
- Site access, internal roads and car parking
- Drainage and stormwater management
- Other ancillary infrastructure including security fencing, lighting and CCTV.

It is currently anticipated that construction of the Project would take up to 12 months, starting in 2021 and being completed in 2022.

Construction works would be likely to comprise:

- Enabling works
  - Site clearance activities
  - Installation of erosion and sediment controls and site fencing
  - Provision of construction power
  - Minor earthworks to form a level BESS pad, switchyard area and construction laydown areas, including potential import or export of fill as required
  - Development of site access
- Civil, structural, mechanical and electrical works

  - Connections to surrounding utilities, as required
  - Structural works to support BESS facilities
  - Construction of supporting structures, e.g. office building, workshop, and transmission line landing gantry
  - Delivery, installation and electrical fit-out of BESS
  - Construction of transmission connection between the Site and the TransGrid Broken Hill substation, including installation of supporting structures, stringing the transmission line, and works at the transmission line landing gantry on site and the 22 kV busbar at the substation
  - Transportation of plant, equipment, materials and workforce to and from the Site as required
- Commissioning
  - Testing and commissioning activities
- Demobilisation
  - Provision of landscaping, as required
  - Removal of construction equipment and rehabilitation of construction areas, where required.

A construction laydown area would also be provided on the Site. Minor earthworks would be required across this Site, including levelling the Site to ensure a suitable development footprint and establishment of site access. Excavations within the Site would be to a maximum of 1.5 m deep, with an up to 3 m footing only for the transmission line poles.

1.2 Site Description

The Site is located at 74-80 Pinnacles Place on the following land parcels:

- Lot 57 Deposited Plan (DP) 258288; and
- Lot 58 DP 258288

A Site location plan is provided in **Figure 1** in **Appendix A**. A Site layout and sampling location plan is shown on **Figure 2** in **Appendix A**.

The Site is zoned IN1 – General Industry under the *Broken Hill Local Environmental Plan 2013* (Broken Hill LEP). The Site is approximately 0.8 ha in area. Access to the Site is from Pinnacles Place, a sealed road.

The Site is significantly disturbed and is used as a storage area for building materials, vehicles, truck trailers, and products relating to the maintenance of vehicle engines equipment. The vegetation on the Site is in a degraded state and there is limited fauna habitat. Numerous vehicle tracks cross through the Site and broad areas of bare sand also occur. **Plate 1** shows the storage of equipment at the Site.

Plate 1 Lot 58 DP 258288 78 to 80 Pinnacles Place Broken Hill

The TransGrid Broken Hill substation is approximately 220 m west of the Site. A 22 kV above-ground transmission line would be required to connect the proposed BESS to the substation. The land that this connection would cross consists of the following two land parcels:

- Lot 7302 DP 1181129; and
- Lot 2 DP 1102040.

Lot 7302 DP 1181129 includes an ephemeral north south drainage line and an unsealed vehicle track. **Plate 2** shows a picture of the ephemeral drainage line.

The vegetation in this area is in both a degraded and moderate condition. This land is freehold land that is owned by the NSW government and is classified as Commons.

The TransGrid Broken Hill substation is located on Lot 2 DP 1102040. The vegetation outside the substation compound that might be crossed by the proposed connection is in a degraded state. A connection to the busbar in the substation compound would be required as part of the Project.

Given that the proposed transmission line is above-ground, and areas where disturbance would occur are limited to transmission line pole installation, AECOM did not inspect or collect samples along the transmission line corridor, outside of the Site as part of this DSI & Assessment.

Plate 2 View of the ephemeral drainage line

The Site is located approximately 2 km west of the town of Broken Hill in a semi-rural/industrial area. Industrial land uses are located adjacent to and around the Site.

Several freight storage and handling yards are located immediately to the east, while rural properties are located to the south and east. Approximately 200 m to the north is Adelaide-Broken Hill Railway with the Broken Hill Community Recycling Centre.

Broken Hill is prominent in Australia's mining, industrial relations and economic history after the discovery of silver ore led to the opening of various mines in the 1880s. Several mines continue to operate in the vicinity of the Project, including the mine operated by Cristal Mining Australia Limited located approximately 500 m to the west and the mine operated by Perilya Limited located approximately 1 km to the east.

The 53 MW Broken Hill Solar Plant operated by AGL was completed in 2016 and is located approximately 1.5 km west of the Project. At the time of construction, the Broken Hill Solar Plant was one of the largest renewable energy facilities in Australia. In addition, AGL has completed construction of the 200 MW Silverton Wind Farm which is located 20 km north west of the TransGrid Broken Hill Substation.

1.3 Purpose of this Report

1.3.1 Assessment objective

The objective of DSI & Assessment is to identify and document areas of potential contamination and contaminants of potential concern (CoPC) which may be required to inform future development works at the Site and evaluate the requirement for further assessment and or management actions to be implemented prior to the proposed development works.

1.3.2 Secretary's environmental assessment requirements

The Secretary's Environmental Assessment Requirements (SEARs) were issued by the Department of Planning, Industry and Environment (DPIE) on 23 November 2020. The SEARs relating to contamination and waste and where these requirements are addressed in this DSI & Assessment, are outlined in **Table 1**.

Table 1 Relevant SEARs

Soils and Contamination Impact	How addressed in this document
The EIS must address the following specific issues: • **Hazards and Risks - including: an assessment of potential hazards and risks including but not limited to…land contamination.**	• Based on a review of available desktop information the Preliminary conceptual site model in **Section 7.0** identifies the potential sources of contamination, potential receptors and transport mechanisms. Based on the findings of the disturbance works (soil analytical results) complete or potentially complete exposure pathways at the Site are identified in **Section 10.0**.
• **Waste – identify, quantify and classify the likely waste stream to be generated during construction and operation, and describe measures to be implemented to manage, reuse, recycle and safely dispose of this waste**	• Refer to soil waste classification results in **Section 9.3**. • As per recommendations (**Section 12.0**) a Construction Environment Management Plan (CEMP) should be prepared prior to any development works undertaken on Site. The CEMP would detail management and mitigation measures for waste management, soil erosion and sediment transport during the construction works.

1.4 Scope of DSI and Assessment

A desktop review of the Project Area (which comprises the Site (Lot 57 DP 258288 and Lot 58 DP 258288), and the transmission line corridor (part of Lot 7302 DP 1181129 and part of Lot 2 DP 1102040)) was completed to understand the existing ground conditions and the likely level of assessment required. This desktop assessment was informed by various database searches, aerial photos, site photos and site walkovers. During this assessment it was identified that different parts of the Project Area presented different levels of contamination risk.

The Site has been used for the storage of wastes and machinery and therefore could potentially be contaminated. As such this DSI and Assessment was completed for the Site, which involved ground investigations.

Lot 7302 and the land on the TransGrid lot outside the main substation had not be subjected to industrial or other land uses and did not appear to have been previously developed or used. Therefore a desktop assessment was completed for the other parts of the Project Area given the low likelihood of contamination and the minimal intrusive works proposed. This desktop assessment is included in **Chapter 11.0 Soils, groundwater and contamination** of the Environmental Impact Statement.

The scope of work undertaken in preparation of this DSI & Assessment for the Site comprised:

Task 1 Desktop review of historic and current Site information

- Desktop review of database searches (New South Wales Environment Protection Authority [NSW EPA], NSW Office of Environment and Heritage [NSW OEH], NSW Department of Primary Industries - Office of Water, NSW Department of Industry, Resources & Energy, Commonwealth Scientific and Industrial Research Organisation [CSIRO]) to assess elements of environmental inputs including historical use, land zoning, topography, geology, water resources, sensitive receptors.
- Review of historical aerial imagery.
- Development of a preliminary Conceptual Site Model (CSM) to identify CoPC, exposure pathways and receptors to refine the proposed sampling for the Contamination Investigation.

Task 2 Contamination Investigation

- Preparation of a Safety Health and Environmental Management Plan (SHEMP) including Safe Work Method Statements (SWMS) for the Site fieldworks;
- Dial-Before-You-Dig plans obtained and reviewed. All locations were cleared by an accredited Service Locator prior to intrusive works and were carried out in accordance with AECOM's service identification clearance (SIC) procedures;
- Drilling of six boreholes (refer to **Figure 2** in **Appendix A**) across the Site to a maximum depth of 8 m below ground level (m bgl). Groundwater was not encountered during drilling works and therefore no monitoring wells were installed.
- Soil samples were collected at one location identified as 'Tank' where staining and odours were noted on surface soils from a spill of possible engine oil from an intermediate bulk containers (IBC) located in proximity.
- Soil samples were collected from surface and at any changes in soil profile. Soil samples were analysed for CoPC identified in the preliminary CSM:
  - pH;
  - cation exchange capacity (CEC) (to calculate specific ecological investigation levels [EILs] for selected heavy metals);
  - heavy metals (arsenic [As], copper [Cu], cadmium [Cd], chromium [Cr], lead [Pb], nickel [Ni], mercury [Hg], zinc [Zn]);
  - total recoverable hydrocarbons (TRH) and total petroleum hydrocarbons (TPH);
  - benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN);
  - polycyclic aromatic hydrocarbons (PAHs);
  - volatile organic compounds (VOCs); and
  - asbestos.
- Assessment of the concentrations of contaminants against the adopted Site Assessment Criteria for the future land use with consideration given to construction workers during the construction phase of the Project.
- Refinement of the preliminary CSM based on the results of the disturbance investigation.
- Preparation of this report documenting the findings of Task 1 and Task 2.

1.5 Data Quality Objectives

The Data Quality Objectives (DQO) process is used to "*define the type, quantity, and quality of data needed to support decisions relating to the environmental condition of a site*", as stated in Appendix B of Schedule B *Guidelines on Site Characterisation* (NEPC 1999, amended 2013) and *NSW EPA Site Auditor Guidelines* (NSW EPA, October 2020).

1.5.1 Step 1 – State the problem

AGL intends to construct a BESS on the Site. The Project is classified as SSD. As such, this DSI & Assessment has been prepared to address the SEARs (refer to **Section 1.3.2**). The DSI & Assessment was also prepared to meet the requirements of State Environmental Planning Policy 55 (SEPP55) – Remediation of Land.

The Site has been used to store plant/machinery and infrastructure associated with truck maintenance and freight. There is potential for contamination in the soil (no groundwater was identified to a maximum depth of investigation 8 m bgl associated with the Site's historic use).

1.5.2 Step 2 – Identify the decisions

The decisions to be made based on the results of the DSI & Assessment are as follows:

1. Is the Site suitable for development as a BESS or can it be made suitable?
2. Is remediation required within the Site to make it suitable for the Project?
3. Are further investigations required to assess the suitability of the Site for the Project or to assess the need for remediation?
4. What environmental and occupational safety management controls will be required for the construction of the Site?
5. Are the data reliable and adequate for decisions to be made about the future use of the Site for a BESS?

1.5.3 Step 3 - Identify the decision inputs

The inputs required to make the above decisions listed in Step 2 are as follows:

1. Existing data for the Site (from previous investigations if available).
2. Proposed Site boundaries.
3. Appropriate NSW EPA guideline documents.
4. Appropriately experienced environmental consultants.
5. Geological and geotechnical data and information relevant to subsurface structures.
6. Hydrogeological data.
7. Concentrations of CoPC in different sampled media (e.g., fill/soil types, groundwater).
8. Observations regarding the presence of building materials or other waste materials including materials potentially containing ash, asbestos, staining, odours and discolouration of the soil media.
9. Observation data for the presence of light and dense non-aqueous phase liquids (LNAPL/DNAPL), odours and discolouration of the groundwater and surface water media.
10. Distribution of identified contamination, both laterally and vertically.
11. Identify potential receptors and pathways based on assessment of CoPC in the environment from the newly collected data.
12. Assessment criteria will be selected for the purpose of screening relevant environmental data.
13. Field and laboratory Quality Assurance and Quality Control (QA/QC) data.

1.5.4 Step 4 – Definition of the boundaries of the remedial works

The boundaries of the investigation have been identified as follows:

1. Spatial boundaries – The lateral assessment is limited to the boundary of the Site as shown in **Figure 1** in **Appendix A**.
2. Vertical boundaries – The vertical study boundary will be limited to the deepest depth of the disturbance investigation of approximately 8 m bgl.

3. Temporal boundaries –The temporal boundaries of the assessment have been determined based on application of current guidelines and data collected in January 2021. Development works should commence before new contamination sources arise at the Site that could result in additional contamination since the time of this investigation and prior to the commencement of development works.

1.5.5 Step 5 – Develop decision rules

The decision rules for this investigation are as follows:

1. If it is determined that data generated through this investigation are reliable and suitably characterise soil and groundwater contamination, the data set will be compared against the adopted Site Assessment Criteria (SAC):
    a. If comparison of data generated through this investigation meets the adopted SAC, then the Site will be considered suitable for the Project in accordance with planning approval requirements.
    b. If comparison of data generated through this investigation does not meet the adopted SAC, then further assessments or remediation may be recommended as a basis for making the Site suitable for the Project.
2. If it is determined that data generated through this investigation are not reliable and/or do not suitably characterise soil and groundwater contamination as required for determining land use suitability, then further investigations may be recommended prior to comparison against the SAC.

1.5.6 Step 6 – Specification of the acceptable limits on decision errors

Acceptable limits on decision errors must be applied based on the Data Quality Indicators (DQIs) of Precision, Accuracy, Representativeness, Comparability and Completeness (PARCC).

The tolerable limits on decision errors for data that AECOM considers acceptable are:

1. Probability that 95% of data satisfied the DQIs, therefore the limit on the decision error is 5% that a conclusive statement may be incorrect.
2. A robust QA/QC program will be implemented and appropriate sampling and analytical density for the purposes of the investigations and representative sampling is undertaken.

    The possible outcomes on making an error in the decision are:

    a. Basing decisions on unreliable data and consequently making incorrect decisions regarding land use suitability.
    b. Basing decisions on unreliable data and inappropriately defining a remedial or management strategy.

    This could result in the following outcomes:

    i. Confirmation that the Site is suitable for the proposed land uses when it is not (or vice versa).
    ii. Possible underestimation (or overestimation) of remediation extent required, resulting in cost and time implications.
    iii. Possible underestimation of contamination on the Site resulting in unidentified risks to human health and ecological receptors as part of the proposed development works and future land use.
    iv. Adoption of inappropriate remediation strategies for the identified contamination resulting in cost implications.

Relevant performance and/or acceptance criteria were determined for QA/QC purposes and comparison of soil and groundwater analytical results to appropriate assessment criteria. The DQIs are described in **Section 1.6** below. The adopted SAC is described in **Section 7.0** of this report.

1.5.7 Step 7 – Optimisation of the design of the collection of data

The collection of data will be optimised by the development of an appropriate sampling and analytical strategy (this document). Attainment of the DQOs will be assessed by reference to the DQIs, presented in **Section 1.6**.

1.6 Data Quality Indicators

The required acceptance criteria for data collected are outlined below in the form of DQIs based on the parameters of PARCC.

Non-compliances with acceptance limits have been documented and discussed in this report. The DQIs are outlined below.

Table 2 Data Quality Indicators

DQI	Field	Laboratory	Limits
Precision	AECOM Standard Operating Procedures (SOPs) appropriate and complied with Collection of inter-laboratory and intra-laboratory duplicate samples	Analysis of: • Inter-laboratory duplicate samples (1 in 20 samples) Intra-laboratory duplicate samples (1 in 20 samples) • Laboratory duplicate samples • Laboratory prepared trip blank (1 per batch) • Laboratory prepared trip spike (1 per batch)	• Relative percentage difference (RPD) of <30% • RPD of <30% • RPD of <30 % • Recovery <limit of reporting (LOR)
Accuracy	SOPs appropriate and complied with Documentation correct	Analysis of: • Surrogates (1 per batch) • Laboratory Control Spikes (1 per batch) • Laboratory Matrix Spike (1 per batch) • Method blanks (1 per batch)	• Recovery range 70-130% • Recovery range 70-130% • Recovery range 70-130% • <LOR for chemicals of potential concern (COPC)
Representativeness	Appropriate media sampled All relevant media sampled	• All samples analysed according to appropriate SOPs • Laboratory blanks (1 per batch) • Samples extracted and analysed within holding times • Field meters such as a photo ionisation detector (PID) or water quality meter are to be calibrated daily and calibration records maintained	• As per SOPs • <LOR for COPCs • 14 days for petroleum hydrocarbons and VOCs 180 days for Asbestos and Heavy metals 28 days mercury • As per SOPs

DQI	Field	Laboratory	Limits
Completeness	All critical locations sampled SOPs appropriate and complied with Experienced samplers Documentation correct	• All critical samples analysed, and all analytes analysed according to procedures • Appropriate methods • Appropriate Practical Quality Limits (PQLs) • Sample documentation complete • Sample holding times complied with	• As per the ASC NEPM • As per the ASC NEPM • < nominated criteria • As per the ASC NEPM • As per the ASC NEPM
Comparability	Consistent soil Experienced samplers Climatic conditions Same types of samples collected Work carried out by appropriately trained staff with appropriate qualifications and training (including sub-consultants)	• Same analytical methods used • Sample PQLs (justify / quantify if different) • Same laboratories (NATA accredited) • Same units	• As per the ASC NEPM < nominated criteria

1.7 Sources of Information

A search of the following databases was conducted by Lotsearch Pty Ltd (Lotsearch) report dated 17 December 2020 (**Table 3**).

Table 3 Databases Searched

Database	Database Title
State Government NSW – Department of Finance, Services & Innovation	Cadastre Boundaries, Topographic Data, Points of Interest, Tanks (area), Tanks (Points), Major Easements, State Forest, Mining Subsidence Districts.
NSW EPA	List of NSW contaminated sites notified to EPA, Contaminated Land: Records of Notice, Former Gasworks, EPA Per- and Poly-fluoroalkyl substances (PFAS) Investigation Program, EPA Other Sites with Contamination Issues, Licensed Activities under the *Protection of the Environment Operations Act 1997* (POEO Act), Delicensed POEO Activities still Regulated by the EPA, Former POEO Licensed Activities now revoked or surrendered, Underground Petroleum Storage Systems (UPSS) Environmentally Sensitive Zones.
Commonwealth of Australia – Geoscience Australia	National Waste Management Site Database, Hydrogeology Map of Australia.
Hardie Grant	Universal Business Directory (UBD) 1982 (Premise & Intersection Matches), UBD 1982 (Road & Area Matches), UBD 1970 (Premise & Intersection Matches), UBD 1970 (Road & Area Matches), UBD 1961 (Premise & Intersection Matches), UBD 1961 (Road & Area Matches), UBD 1950 (Premise & Intersection Matches), UBD 1950 (Road & Area Matches), UBD Drycleaners & Motor Garages/Service Stations (Premise & Intersection Matches), UBD Drycleaners & Motor Garages/Service Stations (Road & Area Matches).

Database	Database Title
State Government NSW – Office of Environment & Heritage	NSW National Parks and Wildlife Service Reserves, Soil Landscapes, Dryland Salinity Potential of Western Sydney, State Heritage Items, Vegetation of Central-Southern NSW, NSW BioNet Species Sightings.
Commonwealth of Australia – Bureau of Meteorology	Groundwater Boreholes, Groundwater Dependent Ecosystems, Inflow Dependent Ecosystems.
NSW Department of Primary Industries – Water NSW	Groundwater Boreholes.
State Government NSW – Department of Industry, Resources and Energy	Naturally Occurring Asbestos Potential.
Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	Atlas of Australian Soils.
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Atlas of Australian Acid Sulfate Soils.
State Government NSW – Department of Planning, Industry and Environment	Geological Units 1:250,000, Geological Structures 1:250,000, Environmental Planning Instrument Acid Sulfate Soils, Environmental Planning Instrument SEPP State Significant Precincts, Environmental Planning Instrument Land Zoning, State Heritage Register – Curtilages, Environmental Planning Instrument Heritage.
National Land and Water Resources Audit	Dryland Salinity - National Assessment.
Department of Agriculture, Water and the Environment	Ramsar Wetlands.
NSW Department of Industry	Current Mining Titles, Mining Title Applications, Historic Mining Titles.

The report provided by Lotsearch containing the results of the database searches and the *Environment Protection and Biodiversity Conservation Act Cth 1999* (EPBC Act) search for the Site is provided in **Appendix B**. Planning certificates (Section 10.7) and Certificates of Title are provided in **Appendix C**.

A Site inspection was undertaken by AECOM as part of the disturbance works (refer to **Section 6.0**).

No previous investigation reports pertaining to the Site were received.

2.0 Legislative and Policy Context

2.1 Commonwealth Legislation, Policies and Guidelines

AECOM has prepared this DSI & Assessment with consideration of relevant Commonwealth legislation, including the *Work Health and Safety Act 2011* (WHS Act), EPBC Act and the ASC NEPM (NEPC, 2013).

2.1.1 Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act is the Australian Government's central piece of environmental legislation.

Under the EPBC Act, any activity which is likely to have a significant impact on the environment, or on matters of national environmental significance, requires the approval of the Commonwealth Minister for the Environment. Under the EPBC Act, 'environment' is defined broadly and includes, but is not limited to, ecosystems and their constituent parts, people and communities, natural and physical resources and the heritage values of places. Non-compliance can result in penalties for both individuals and the organisation.

2.1.2 National Environment Protection (Assessment of Contamination) Measure 1999 as amended in 2013

National Environment Protection Measures (NEPMs) are developed by the National Environment Protection Council to protect or manage particular factors of the environment.

NEPMs establish a nationally consistent approach to the assessment of site contamination to ensure sound environmental management practices. The *National Environment Protection Measures (Implementation) Act 1998* (Implementation Act) gives the Commonwealth Government the power to implement NEPMs on its own land and for its own activities.

2.1.3 Workplace Health and Safety Act 2011 and Work Health and Safety Regulation 2011

In 2011, Australia embarked on significant reform of the National Work Health and Safety Strategy. The process commenced in 2002 with the Workplace Relations Ministers' Council, the Australian Council of Trade Unions and the Australian Chamber of Commerce and Industry endorsing the current National Occupation Health and Safety (OHS) Strategy 2012-2022 (Safe Work Australia, 2011) to provide a framework of national activities to improve the health and safety of workers in Australia.

The model WHS legislative framework consists of the WHS Act, *Work Health and Safety Regulation 2011* (WHS Regulation) (both being statutory instruments), supported by advisory Codes of Practice. In addition to these National Codes of Practice, regulatory compliance may also be demonstrated by following technical or industry standards (such as the Australian Standards) where they provide a standard of work health and safety equivalent to, or higher than, the Code of Practice.

The AECOM Site inspection was undertaken in accordance with the Project Health and Safety Plan prepared with reference to the WHS Act and WHS Regulation.

2.2 New South Wales Legislation, Policies and Guidelines

The following sections provide an overview of NSW legislation relevant to informing this DSI & Assessment.

2.2.1 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) is administered by the NSW EPA. It prohibits any person to cause pollution of waters or air and provides penalties for air, water and noise pollution offences. The POEO Act enables the NSW Government to set out explicit protection of the environment policies (PEPs) and adopt more innovative approaches to reducing pollution.

2.2.2 Contaminated Land Management Act 1997

The *Contaminated Land Management Act 1997* (CLM Act) aims to promote the better management of contaminated land. The objects of the CLM Act are to establish a process for investigating and (where appropriate) remediating land areas where contamination presents a significant risk of harm to human health or some factor of the environment. The NSW EPA has powers to respond to contamination that

is causing significant risk of harm to human health or the environment. The NSW EPA can direct landowners to investigate or remediate contaminated land and requires landowners to report contamination where there is a significant risk of harm (Duty to Report).

2.2.3 NSW EPA Contaminated Land Guidelines, Consultants reporting on Contaminated Land. 2020

The Contaminated Land Guidelines, *Consultants reporting on contaminated Land* are made by the NSW EPA under section 105 of the CLM Act. The Guidelines form part of a series of statutory guidelines made or approved by the EPA to support the administration of the CLM Act.

The Guidelines provide a reporting framework and information to ensure that reports prepared by consultants on the management of contaminated land contain the right information in a suitable format to inform and explain management decisions, document outcomes, and provide for efficient review by regulators, the site auditor and other relevant stakeholders.

The Guidelines:

- describe the stages of reporting on the management of contaminated land and the objective of the reports for each stage.
- provide checklists of reporting requirements for consultants to use when reporting on contaminated land.
- form part of a series of statutory guidelines made or approved by the EPA to support the administration of the CLM Act.

3.0 Site Identification

Site identification details are presented in **Table 4**.

Table 4 Site Identification Details

Item	Description
Site name	Proposed site of the Broken Hill BESS
Site Address	74 to 80 Pinnacles Place, Broken Hill, NSW 2880
Title identification details	Lots 57 and 58 of Deposited Plan (DP) 258288
Lease/ownership details	Proposed Site currently owned by Galena Developments Pty Ltd and Globe IBH Pty Ltd as tenants in common
Co-ordinates (Geocentric Datum of Australia 1994 [GDA94])	-31.986339261 141.423008959 Approximate centre of Site
Site area	Approximately 7,900 m² (six maps NSW Government)
Site features	• The Site is an empty lot primarily used for the storage of building materials, vehicles, truck trailers, new and used building materials and products relating to the maintenance of vehicle engines. • A large turning circle has been cleared through the Site which allows large trucks to enter, attach trailers and exit site from both the east and west access gates. • A security fence is present around the perimeter of the Site with a locked gate on both the western and eastern boundaries.
Local Government Area	Broken Hill City Council
Current land use and zoning	The Site is used for storage of infrastructure, equipment, vehicles and other materials. The Site is zoned IN1 – General Industry in accordance with the Broken Hill Local Environment Plan (LEP) 2013
Proposed land use	The proposed land use for the Site is as a BESS which would provide a range of network services to assist in augmenting the reliability of energy supply.
Surrounding land use	• **North:** Commercial/industrial land use on Pinnacles Place followed by the Adelaide-Broken Hill Railway and associated access roads. Further north is a wastewater treatment facility is visible to the north-west and the Broken Hill Community Recycling Centre are both on Wills Street. • **South:** Commercial/industrial land use on Pinnacles Place including Mildura Broken Hill and Farwest Transport. Further south is Pinnacles Road followed by open space including the ephemeral creek line running south-east. • **East:** Commercial/industrial land use on Pinnacles Place, Pinnacles Road and Kanandah Road and Kanandah Place including a service station and numerous transport/logistics and a sand mining premises. • **West:** Land subject to an undetermined Aboriginal land claim, an access road running north-south across the railway line and joining with Pinnacles Road. Further west is the TransGrid Broken Hill substation, followed by numerous large commercial/industrial premises including Cristal Mining Australia Limited.

Note: installation of above-ground transmission connection traversing Lot 7302 DP 1181129 and Lot 2 DP 1102040 is not considered part of the Site and has not been assessed as part of this DSI & Assessment. Refer to **Section 1.4** for further detail.

4.0 Historical Review

The history of the Site was informed by the Lotsearch Enviro Professional report (17 December 2020) Reference LS016871 EP which included historical aerial imagery (refer to **Appendix B**). An overview is provided in the sections below.

4.1 Previous Owners and Land Users

The Section 10.7 Planning Certificate issued by Broken Hill City Council under the *Environmental Planning and Assessment Act 1979* stated:

- The land does not include or comprise a critical habitat area under the *Threatened Species Conservation Act 1995*.
- The land is not located in a heritage conservation area and is not listed as a heritage item under the Broken Hill LEP 2013 and is not listed on the State Heritage Register under the *Heritage Act 1977*.
- The land is not affected by the *Coastal Protection Act 1979*.
- The land is not subject to flood related development controls.
- The land is not biodiversity certified land under the *Threatened Species Conservation Act 1995*.
- The land is not bushfire prone land.
- The land is not significantly contaminated within the meaning of the *Contaminated Land Management Act 1997*.
- The land is not subject to a management order within the meaning of the *Contaminated Land Management Act 1997*.
- The land is not subject to a voluntary management proposal within the meaning of the *Contaminated Land Management Act 1997*.
- The land is not subject to an ongoing maintenance order within the meaning of the *Contaminated Land Management Act 1997*.
- The land is not subject to a Site Audit Statement under the *Contaminated Land Management Act 1997*.
- This land may contain levels of heavy metals associated with Broken Hill being a mining town. Council has not undertaken testing specific to this property in relation to this matter.
- Under the provisions of the *Native Vegetation Act 2003*, approval may be required under the *Environmental Planning and Assessment Act 1979* for the clearing of native vegetation within the Broken Hill Government Area.
- There is the possibility that structures on the parcel of land being purchased may not have been constructed entirely upon or within the relevant boundaries.

Historical Certificates of Title indicate that the Site is owned and operated by Galena Developments Pty Ltd and Globe IBH Pty Ltd as tenants in common equal shares. No Historical Certificates of Title were issued for Lot 57 and Lot 58 in DP 258288 as control of the right to deal is held by Australia and New Zealand Banking Group Limited (mortgagee for the Property). The Certificate of Title noted that the land excludes minerals.

4.2 Aerial Photographs

Historical aerial photographs from 1954 to 2020 are provided in **Appendix B**. A summary is provided in **Table 5** below.

Table 5 Historical Aerial Photograph Review

Photograph Details	Description
1954 Black and White	**Site:** The image quality is very poor. The Site appears to be vacant with some vegetation visible in the southern and eastern portions. **Surrounds:** The Site surrounds appear to be largely vacant with some access tracks visible.
1965 Black and White	**Site:** The Site remains largely unchanged since the 1954 aerial photograph. Vegetation is visible across the Site. **Surrounds:** The Site surrounds remain largely unchanged since the 1954 aerial photograph. Vegetation is visible surrounding the Site predominantly east, north-east and south-east. A road (now Pinnacles Road) is visible south of the Site in an east to west direction.
1971 Black and White	**Site:** The Site remains largely unchanged since the 1965 aerial photograph. An access track is visible through the southern portion and cleared/disturbed land in the south-eastern portion. **Surrounds:** The Site surrounds remain largely unchanged since the 1965 aerial photograph. Cleared/disturbed land within the south-eastern portion of the Site extends to the east and south of the Site. A road (now access roads beside the Peterborough Broken Hill Railway) is visible north of the Site in a north-east to south-west direction.
1975 Black and White	**Site:** The Site remains largely unchanged since the 1971 aerial photograph. **Surrounds:** The Site surrounds remain largely unchanged since the 1971 aerial photograph. Access tracks and/or drainage channels are visible surrounding the Site.
1982 Black and White	**Site:** The Site remains largely unchanged since the 1975 aerial photograph. **Surrounds:** The Site surrounds remain largely unchanged since the 1975 aerial photograph. A structure is visible north-west of the Site. Pinnacles Road (possibly sealed) is visible south-west of the Site and Pinnacles Place (possibly unsealed) is visible adjacent and east of the Site.
1995 Colour	**Site:** The Site remains largely unchanged since the 1982 aerial photograph. **Surrounds:** Pinnacles Place is sealed immediately adjacent and east of the Site. A fenced site is visible north of the Site (66 Pinnacles Place) with a sealed compound in the centre and two demountables or structures in the north-western corner and some plant/infrastructure around the southern and south eastern boundaries. A fenced site is also visible south of the Site (86 Pinnacles Place – Mildura Broken Hill & Farwest Transport) with numerous plant/machinery in the centre and a large building visible in the northern portion. A portion of the TransGrid Broken Hill substation is visible west of the Site and two ponds are visible south-west of the Site.
2004 Colour	**Site:** The Site remains largely unchanged since the 1995 aerial photograph. **Surrounds:** The property immediately north has been developed with the surface predominantly covered with hardstand and some structures visible. The properties further north and also to the south have more infrastructure visible. Pinnacles Road to the south appears to have been resealed and the access road to the west of the Site (name unknown) also appears to have been sealed. Some ponds on the south-west have been filled in and more green vegetation is visible.

Photograph Details	Description
2010 Colour	**Site:** Three truck containers are visible in the eastern portion of the Site and some materials/structures are visible in the south-eastern portion of the Site. The Site has been predominantly cleared of vegetation. **Surrounds:** The property immediately south of the Site has also been cleared of some vegetation. The property north-east on Pinnacles Place has been sealed and a large warehouse is visible in the centre. The central portion of Pinnacles Place has been developed – partially sealed with a large warehouse and numerous cars, plant, machinery and materials are visible on the site. The properties south-east of Pinnacles Place have also been developed with various commercial/industrial land uses. Vegetation is visible to the east along ephemeral drainage lines running north to south. A pond is visible south-east of the TransGrid Broken Hill substation.
2015 Colour	**Site:** Vegetation is visible across the majority of the northern and central portions of the Site. Some structures/materials are visible in the centre of the Site. An access track/turning circle is visible between the eastern and western gates in the southern portion of the Site. **Surrounds:** A property on Pinnacles Place to the north-west has been developed with a large warehouse and an L shaped building is visible. The property immediately south of the Site has been developed with a large warehouse and a smaller structure is visible. The property in the centre of Pinnacles Place shows cars, plant, machinery and materials have been removed from the open areas with a second warehouse visible in the south-eastern portion of the property. The pond south-east of the TransGrid Broken Hill substation appears to be empty/drained.
2020 Colour	**Site:** The Site comprises storage of infrastructure and waste tyres in its' centre and southern portion. Storage of cargo trucks are visible in the south-western portion. A cleared access road/turning circle is visible in the centre of the Site. Numerous shrubs are visible scattered around the remaining areas. **Surrounds:** An extension is under construction to the building located at 86 Pinnacles Place – Mildura Broken Hill & Farwest Transport south of the Site. There are stockpiles visible at 42 Pinnacles Place north-west of the Site. 62 Pinnacles place has been developed – vegetation cleared, a building constructed, various plant and machinery on the property , and a turning circle is visible in the centre of the site. An increased number of plant/machinery and materials are visible on the properties surrounding the Site.

4.3 Historical Business Activities

A historical business activities search (premise or road intersection and road or area matches), including dry cleaners, motor garages, and service station in the Lotsearch report in **Appendix B** indicated there were no records within the Site or within a 1 km radius of the Site.

4.4 Chemical Use and Waste Management

A summary of waste management facilities identified in the Lotsearch report (refer to **Appendix B**) is provided in the table below.

Table 6 Waste Management Facilities within 1 km of the Site

Owner	Name Address	Class	Reprocess/ Transfer	Distance and Direction from Site
Broken Hill City Council	Wills Street, Broken Hill	Landfill	Operational	502 m north-west

Based on the above information the waste management facility is located up-gradient of the Site.

5.0 Environmental Setting

The Site environmental setting details are summarised in this section from relevant sources of information identified in **Section 1.7**. A copy of relevant search information that aligns with the information presented in **Sections 5.1** to **5.11** is provided in **Appendix B**.

5.1 Topography

The topography at the Site is relatively flat at approximately 290 m Australian Height Datum (m AHD). The topography surrounding the Site generally slopes slightly south or south-east (refer to **Appendix B**).

5.2 Geology and Soils

The 1:250,000 geological sheet shows the Site is located within the Precambrian aged Willyama Complex. South-east of the Site are three geological units in order of distance – amphibolite, sillimanite gneiss, adalusite-, chiastolite-, mica-, schist, phyylite, quartzite, sandstone, slate and granite gneiss (refer to **Appendix B**).

The Atlas of Australian Soils indicates that the Site and surrounding area are classified as Tenosol soil type – hilly with small valley plains, shallow dense loamy soils, shallow calcareous loamy soils and shallow loams and sand occur on the hills. Associated are crusty loamy soils and a highly calcareous loamy earths on pediments, slopes and in the small valleys (refer to **Appendix B**).

The Atlas of Australian Acid Sulfate Soils indicates that the Site and immediate surrounds are categorised as having an extremely low probability (1-5% chance) of Acid Sulfate Soil (ASS) occurrence (refer to **Appendix B**).

The Dryland Salinity National Assessment indicates that there are no data for the Site or surrounding area (refer to **Appendix B**).

No naturally occurring asbestos or occurrences of mining subsidence is indicated on or within 500 m of the Site (refer to **Appendix B**).

5.3 Hydrology and Hydrogeology

5.3.1 Hydrology

Groundwater resources within the regional Broken Hill area can be classified into three groups:

- Perched groundwater present in the thin veneer of Quaternary sediments overlying the Proterozoic bedrock formations;
- Groundwater present in thick sequences of colluvial sediments that have accumulated on downthrown fault blocks along the western margin of the Barrier Ranges; and
- Groundwater present within structural features of the Proterozoic bedrock.

Surface water drainage features are visible west of the Site which drain in a southerly direction. It is likely that groundwater also drains in a southerly or south-easterly direction.

A search and review of the EPBC protected matters search tool indicated that there are no wetlands of international importance within a 10 km radius of the Site.

5.3.2 Hydrogeology

The NSW Department of Primary Industries – Office of Water dataset reveals there are no registered groundwater bores located onsite and 13 registered groundwater bores within 1 km of the Site with the following characteristics, summarised in **Table 7** below:

- The recorded purposes of the groundwater bores were ‘monitoring’ for all except one which was for the purpose of ‘aquaculture and monitoring’;
- The final installed depth of the groundwater bores ranged between 2.00 to 36.00 m bgl; and

- Recorded standing water levels (SWLs) were not available for the majority of bores located within 500 m of the Site. Recorded SWLs from six bores identified within 877 m and 986 m of the Site ranged between 0.90 and 20.50 m bgl.

The full list of identified registered groundwater bores is presented in the Lotsearch report in **Appendix B**.

Table 7 Registered Groundwater Bores within 1 km of the Site

GW No.	Purpose	Completion Date	Final Depth	SWL	Distance from the Site	Direction
			Metres below ground level			
GW600470	Monitoring Bore	17/10/2013	36.00	0.90	877 m	North-east
GW600471	Monitoring Bore	17/10/2013	5.00	1.20	880 m	North-east
GW600433	Monitoring Bore	05/06/2012	17.00	-	925 m	East
GW600434	Aquaculture, Monitoring Bore	06/06/2012	17.70	-	928 m	East
GW600435	Monitoring Bore	06/06/2012	20.00	-	933 m	East
GW600367	Monitoring Bore	23/04/2010	20.00	-	951 m	North-east
GW600468	Monitoring Bore	15/08/2013	2.00	-	960 m	North-east
GW600362	Monitoring Bore	02/07/2008	17.00	13.00	963 m	North-east
GW600366	Monitoring Bore	23/04/2010	16.00	-	975 m	North-east
GW600368	Monitoring Bore	23/04/2010	20.00	15.86	975 m	North-east
GW600360	Monitoring Bore	01/07/2008	19.00	13.10	979 m	North-east
GW600361	Monitoring Bore	02/07/2008	26.00	20.50	986 m	North-east
GW600365	Monitoring Bore	23/04/2010	25.00	-	995 m	North-east

Based on the above information, there is potential for shallow groundwater to be present at the Site at less than 2 m bgl. Based on the information reviewed for registered bores, it does not appear that groundwater is beneficially reused within 1 km of the Site with the exception of the aquaculture bore located 928 m east (inferred hydraulically cross-gradient to the Site). It is also noted that there is potential that groundwater is dewatered at the Perilya mine which traverses beneath the Site.

5.4 Climate

Climate statistics available from the Bureau of Meteorology (BOM) for Broken Hill Airport Automatic Weather Station (AWS) (Station ID 047048) located 4.5 km south-east of the Site indicate that the region experiences hot summers and cold winters, with an average maximum temperature of 33.8°C in January and an average minimum temperature of 4.8°C in July. Annual average rainfall is 247.7 mm, with a mean maximum monthly rainfall of 27.6 mm in January and a mean minimum monthly rainfall of 14.8 mm in June.

5.5 Flora and Fauna

There are no RAMSAR wetlands, groundwater dependent ecosystems or inflow dependent ecosystems within a 500 m radius of the Site (refer to **Appendix B**):

No State Forest, National Parks or Wildlife Service Reserves are present on the Site or within 500 m of the Site (refer to **Appendix B**).

The NSW BioNet Atlas indicates that there are eighteen bird species, three mammal species, two reptile species, two amphibian species, and three plant species that have a NSW or Federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement within 10 km of the Site. The full list is provided in **Appendix B**.

A search and review of the EPBC protected matters search tool indicated that there are 22 invasive species (six birds, eight mammals and eight plants), no threatened ecological communities, 12 species listed as threatened and eight species listed as migratory within a 10 km radius of the Site (refer to **Appendix B**).

5.6 PFAS

The Site is not located within the NSW EPA's, the Department of Defence or the Airservices Australia PFAS Investigation Programs (refer to Lotsearch Report in **Appendix B**).

5.7 NSW Environment Protection Authority Contaminated Site Register

There are two sites within 1 km of the Site identified as being on the NSW EPA list of NSW contaminated sites notified to the EPA and no sites on the NSW EPA Contaminated Land Records of Notice (refer to Lotsearch Report in **Appendix B**). Both of these sites are located cross and up-gradient of the Site respectively, details are summarised below.

Table 8 Summary of NSW EPA notified Contaminated Sites and Contaminated Land: Records of Notice up-gradient of the Site

Site Name and Address	Activity	Management Class	Status	Distance and Direction from Site
Tasco Petroleum (Former Mobil) Depot – 5 Kanandah Road, Broken Hill	Other Petroleum	Regulation under CLM Act not required	Current EPA List	853 m East
Former Caltex Depot – 3 Kanandah Road, Broken Hill	Service Station	Regulation under CLM Act not required	Current EPA List	928 m North East

There are no sites identified as former gasworks within 1 km of the Site (refer to **Appendix B**).

5.8 NSW EPA Licensed Activities

5.8.1 Current Licensed Activities

A summary of the licensed activities close to the Site is provided in **Table 9** below.

Table 9 Licensed activities under the POEO Act close to the Site

Licence No.	Organisation	Name	Address	Activity	Distance and Direction from Site
2688	Perilya Broken Hill Limited	Southern Operations	Wentworth Road, Broken Hill	Crushing, grinding or separating	This licence is relevant to mining activities beneath the Site
				Mineral processing	
				Mining for minerals	

The above licence is applicable to activities below ground rather than above-ground activities within the Site.

A summary of the licensed activities within 1km of the Site is provided in **Table 10** below.

Table 10 Licensed activities under the POEO Act 1997 within a 1 km radius of the Site

Licence No.	Organisation	Name	Address	Activity	Distance and Direction from Site
3142	Australian Rail Track Corporation Limited		Australian Rail Track Corporation (ARTC) Network, Sydney NSW 2001	Railway systems activities	206 m north
5898	Broken Hill City Council	Broken Hill Waste Depot	Wills Street, Broken Hill	Non-thermal treatment of hazardous and other waste	502 m north-west
				Waste disposal by application to land	
				Waste storage – waste tyres	
12314	Tronox Mining Australia Limited	Broken Hill Mineral Separation Plant	Pinnacles Road, Broken Hill	Mineral processing	754 m south-west
				Mineral waste generation	
3925	Essential Energy	Wills Street Wastewater Treatment Plant	Wills Street Broken Hill	Sewage treatment processing by small plants	852 m north-east

The licensed activities are generally located hydraulically up-gradient of the Site with the exception of Tronox Mining Australia Limited which is located hydraulically down-gradient of the Site (refer to **Appendix B** for further information). It is noted that AECOM did not identify any groundwater to a maximum depth of 8 m bgl during intrusive works, refer to **Section 9.2.3**, and potential for contamination to migrate from these properties onto the Site is low.

5.8.2 Former Licensed Activities

There were no delicensed activities within the Site or within a 1 km radius of the Site. Former licensed and now revoked or surrendered activities within a 1 km radius of the Site are summarised in **Table 11** below.

Table 11 Former licensed activities now revoked or surrendered within a 1 km radius of the Site

Licence No.	Organisation	Location	Status	Issued Date	Activity	Location
4653	Luhrman Environment Management Pty Ltd	Waterways throughout NSW	Surrendered	6 September 2000	Other activities/ non-scheduled – application of herbicides	51 m east (network of features)
4838	Robert Orchard	Various waterways through NSW	Surrendered	7 September 2000	Other activities/ non-scheduled – application of herbicides	51 m east (network of features)
6630	Sydney Weed & Pest	Various waterways	Surrendered	9 November 2000	Other activities/ non-scheduled	51 m east (network of features)

Licence No.	Organisation	Location	Status	Issued Date	Activity	Location
	Management Pty Ltd	through NSW			– application of herbicides	
11480	Ghanam-El-Kahs Pty Ltd	162 Pinnacles Road, Broken Hill	Surrendered	17 September 2001	Slaughtering or processing animals	147 m south-west
12087	Australian Vermiculture Pty Ltd	Compost facility at Broken Hill landfill, Wills Street, Broken Hill	Surrendered	1 March 2004	Composting	502 m north-west
5113	Consolidated Plant and Quarries Pty Ltd	Pinnacles Road, Broken Hill	Surrendered	20 September 2000	Land-based extractive activity	502 m north-west

The formerly licensed activities are generally located hydraulically cross or down-gradient of the Site with the exception of Australian Vermiculture and Consolidate Plan and Quarries which are located up-gradient (refer to **Appendix B** for further information). Most of the activities were undertaken over 15 years ago.

5.9 NSW EPA Underground Petroleum Storage System Environmentally Sensitive Zones

Underground Petroleum Storage System (UPSS) environmentally sensitive zones are identified by NSW EPA through a risk-based approach to protecting sensitive environmental receptors. They represent a conservative assessment of areas that are likely to be vulnerable to contamination from leaking UPSS (due to geology or groundwater properties), or in close proximity to vulnerable environmental receptors (such as national parks and anything that is likely to be adversely affected by contaminated groundwater, e.g. groundwater bores, rivers or lakes).

As the Site is located a considerable distance from any surface water bodies other than ephemeral creeks, it is considered unlikely that the Site is situated within an UPSS environmentally sensitive zone.

A summary of the national liquid fuel facilities within a 1 km radius of the Site are summarised in **Table 12** below.

Table 12 National Liquid Fuel Facilities within a 1 km radius of the Site

Site Owner Site Operator	Site Address	Class	Status	Distance and Direction from Site
ELGAS – Bromson Energy	24 Kanandah Road, Broken Hill	Fuel Depot	Operational	670 m east
Independent – Bromson Energy	22 Kanandah Road, Broken Hill	Fuel Depot	Operational	673 m east
Caltex – Tasco Inland Australia Pty Ltd	5 Kanandah Road, Broken Hill	Fuel Depot	Operational	853 m east
Caltex	18-20 Kanandah Road, Broken Hill	Petrol Station	Operational	853 m east

During the Site inspection, AECOM staff observed IBC containing what appeared to be waste oil from truck/plant maintenance. The IBC had overflowed onto surface soils where AECOM staff collected soil samples. Further information is provided in **Section 9.1** and **Section 9.3** of this report.

5.10 Current and Historical Mining and Exploration Titles

The Site and surrounding area are located within four current mining and exploration titles. A summary of the titles is provided in **Table 13** below.

Table 13 Current Mining & Exploration Titles within a 1 km radius of the Site

Title Reference	Holder	Grant Date Expiry Date Last Renewed	Operation	Resource (Minerals)	Distance and Direction from Site
CML001	Perilya Broken Hill Limited	02/07/1987 04/09/2024 23/12/2008	Mining	Minerals – Antimony, Apatite, Arsenic, Beryllium and its ores, Bismuth, Cadmium, Cobalt, Copper, Felspar, Fluorspar, Gold, Lead, Limestone, Manganese, Molybdenum and others	Beneath the Site, below ground
EL6689		02/01/2007 02/01/2023 17/04/2018	Exploration	Minerals – Group 1	Beneath the Site below ground
EL6774		08/05/2007 31/10/2018 Renewal sought	Exploration	Minerals – Group 1	274 m north-west
EL5818	Broken Hill Operations Pty Ltd	08/03/2001 08/03/2023 23/06/2017	Exploration	Minerals – Group 1	999 m north-east

There are 13 historical mining and exploration titles within a 1 km radius of the Site of which three were located within the Site and are summarised in **Table 14** below.

Table 14 Historical Mining & Exploration Titles within 1km radius of the Site

Title Reference	Holder	Start Date	End Date	Resource (Minerals)	Distance and Direction from Site
EL1607	North Broken Hill Limited	1/04/1981	1/11/1981	Minerals - Silimanite	Onsite
EL4428	Pasminco Australia Limited	1/10/1992	1/10/1994	Minerals – Lead and zinc	Onsite
PSPAUTH12	Hardie Infrastructure Pty Ltd	4/10/2006	22/07/2008	Petroleum	Onsite

5.11 Unexploded Ordnance

A search of the Australian Department of Defence Unexploded Ordnance (UXO) Contamination database was conducted on 19 January 2021 to evaluate whether the Site or surrounding areas were listed. There were no records of UXO contamination on or within the immediate vicinity of the Site (refer to UXO map search output in **Appendix B**).

6.0 Site Inspection

A summary of the information obtained during the site investigation is provided below. Investigation of the Site took place from 12 to 14 January 2021.

6.1 Site Features

AECOM noted the following features of the Site during inspection:

- The Site is accessible by several large gates on the east and west boundaries (refer to **Photo 6** in **Appendix D**).
- An oval-shaped access track extending the length and width of the Site functions as a turning circle for large trucks loading and unloading trailers within the Site (visible in **Photo 3** and **7** in **Appendix D**).
- New and old waste infrastructure and building materials, vehicle batteries, vehicle tyres, mechanical oils and lubricants as well as other assorted waste was observed across the Site (refer to **Photos 5** and **8** to **14**, **17** and **18** in **Appendix D**).
- Stockpiles of material similar to the material excavated as part of the investigation were observed on the western portion of the Site (refer to **Photo 15** and **16** in **Appendix D**).
- A fragment of building material - suspected potential asbestos containing material (ACM) was observed on surface soils at the south-eastern boundary of the Site (refer to **Photo 10** in **Appendix D**).
- The Site is connected to the town water mains and this connection is located on the eastern boundary.

Additional photos of the Site are included in **Appendix D**.

6.2 Chemical Use and Waste Management

Several drums, IBCs and similar storage containers were observed and appear to have been dumped at the Site. They were mostly along the southern boundary of the Site and many were unlabelled and contained a range of vehicle fuels and oils. Storage containers are either placed on wooden pallets, tarps or directly onto the ground. There was no bunding in place for potential spillage of any liquids from the storage containers. Additionally, there were no safety data sheets displayed. The labelled items included diesel exhaust fluid (AdBlue) and engine oil (Delo 400 and Castrol).

During the site inspection, AECOM observed two stockpiles of waste materials within the western portion of the Site (refer to **Photo No.s 19** and **20** in **Appendix D**). Both stockpiles contained material similar to that encountered across the Site during the soil investigation. No visual signs of contamination or odours were observed from the stockpiles on the Site.

6.3 Stakeholder Interviews

AECOM was not able to interview any owners or occupiers at the Site regarding the Site's history or current use. AECOM is not aware of any previous investigations being undertaken at the Site.

6.4 Proposed Future Land Use

As noted in **Section 1.1,** the proposed land use at the Site would be a BESS and associated infrastructure. Minor excavation works are proposed to level the Site. It is understood a large portion (40%) of the surface would comprise hardstand or concrete pads and footings for infrastructure including a site office.

AGL has advised AECOM that the proposed maximum depth of excavation for the development works on the Site will be 3 m bgl which would likely be for poles for the transmission line landing gantry proposed to extend from the Site across to the TransGrid Broken Hill substation.

7.0 Preliminary Conceptual Site Model

Based on the available historical information and observations relating to the Site and neighbouring properties, potential sources of contamination may comprise:

- Stockpiles of material, it was noted that no observations of potential contamination were made from the surface of the stockpile (refer to **Plates 15** and **16** in **Appendix D**);
- Storage of waste materials such as scrap metal, building materials, plant and machinery parts including batteries and waste tyres on the Site (refer to **Plates 5**, **7** to **18** in **Appendix D**);
- Storage of IBCs, drums, jerry cans with possible waste oils, fuels, degreasers and possible maintenance activities undertaken on plant/machinery (refer to **Plates 8** to **13** in **Appendix D**);
- Heavy metals from mining activities within the town of Broken Hill, as noted in the Section 10.7(5) Planning Certificate, additional information relating to contamination (refer to **Section 4.1**).

7.1 Contaminants of Potential Concern

Based on the available data, CoPC at the Site were identified as:

- Heavy metals: may occur in fill of unknown origin and quality and due to mining activities in the town of Broken Hill. Common metal contaminants include arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc.
- Petroleum hydrocarbons: from historic storage and spills of fuels, solvents and oils. Petroleum hydrocarbons are generally quantified by analytical laboratories as total petroleum hydrocarbons (TPH) and total recoverable hydrocarbons (TRH) and as four fractions of hydrocarbons grouped into ranges of volatility.
- Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene (BTEXN): typically found in petroleum fuels and to a lesser extent, diesel fuels.
- Polycyclic Aromatic Hydrocarbons (PAHs) and Phenols: related to some petroleum hydrocarbon use, waste and lubricating oils. PAH and phenols are also potentially present in bitumen/asphalt, creosote, ash, incompletely combusted materials and fill material of unknown origin and quality.
- Volatile Organic Compounds (VOCs) and Semi-volatile Organic Compounds (SVOCs): VOC compounds may contain monocyclic aromatic hydrocarbons (including BTEXN compounds) and volatile hydrocarbons (such as solvents potentially stored historically at the Site).
- Asbestos: Commonly used in building construction materials up until the mid-1980s. Potentially present within materials of unknown origin and quality and from dumping of old building materials.

7.2 Potential Receptors of Contamination

The National Environment Protection Council (NEPC), National Environmental Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM) as amended 2013 (NEPC, 2013) Schedule B2 suggests a search radius of 500 m from the boundary of the Site for ecological receptors. These documents give guidance on maximum screening distance for viable receptors for impacted groundwater.

Table 15 Identified Potential Receptors

Receptor	On site	Offsite
Human Health	• On-site commercial workers and site users • Intrusive maintenance works during construction and operation	• Not applicable due to no groundwater migration pathway having been identified as part of this assessment
Ecological	• Terrestrial soil environments	• Aquatic environment of the ephemeral creek located east of the Site

As noted above in **Section 9.2.3** AECOM did not encounter groundwater at the Site to the maximum depth of investigation 8 m bgs. As noted in **Section 5.3.2** groundwater has been encountered at depths < 1 m bgs in monitoring wells 1 km upgradient (north and north-east) of the Site. It is possible that groundwater is present after heavy rainfall or seasonally. For the purpose of this preliminary CSM, AECOM has not considered groundwater as a potential migration pathway for contaminants at the Site and, therefore, AECOM has not considered off-site human health receptors.

7.3 Transport Mechanisms

Potential transport mechanisms for Site-derived contaminants (if present) are summarised in **Table 16**.

Table 16 Contamination Transport Mechanisms

Transport Mechanism	Details
Leaching of soil contaminants to surface water during heavy rainfall	Contaminants may leach to surface water from surface soils and migrate via overland flow to the ephemeral creek east of the Site
Wind erosion and atmospheric dispersion of upper layers of surficial soil	Contaminants in surface soil may be dispersed by wind as dust and inhaled by human health receptors
Vapour and gas migration	Volatile contaminants may migrate as vapours and gas through the subsurface and accumulate in structures or buildings where workers occupy

7.4 Potential Exposure Pathways

For a receptor to be exposed to a chemical contaminant, a complete exposure pathway must exist. An exposure pathway describes the course a chemical or physical agent takes from the source to the exposed individual or receptor. An exposure pathway assessment is provided in the updated CSM in **Section 10.0**.

8.0 Adopted Assessment Criteria

8.1 Soil

The primary reference for environmental site assessment in Australia is the ASC NEPM 1999 (NEPC, 2013). This document includes criteria for use in evaluating potential risk to human health and ecosystems from chemical impacts, which are presented as generic investigation levels and screening levels appropriate to a Tier 1 risk-based assessment applicable to the first stage of site assessment. The application of these investigation levels and screening levels is subject to a range of limitations, and their selection and use must be in the context of a CSM relating to the nature and distribution of impacts and potential exposure pathways. The adopted investigation levels for this site assessment based on ongoing commercial/industrial land use have been summarised in **Table 17**.

Table 17 Adopted Soil Assessment Criteria (SAC)

Adopted SAC	Rationale and Selection
Human Health Assessment Criteria	
Health Investigation Levels (HILs), ASC NEPM (NEPC, 2013)	The ASC NEPM health investigation levels (HILs) provide a framework for the use of investigation and screening levels. The framework is applicable for assessing human health risk via all relevant pathways of exposure and covers a broad range of metals and organic substances. The current and proposed Site use is commercial/industrial. **HILs adopted:** HIL D – commercial/industrial.
Aesthetics Amended ASC NEPM (NEPC, 2013)	In accordance with Schedule B1 of the ASC NEPM, the beneficial use of land referred to as “aesthetics” may be precluded where land is considered offensive to the senses – e.g. through the presence of offensive odour or unusually coloured staining.
Management Limits ASC NEPM (NEPC, 2013)	There are Management Limits for specific soil types (coarse and fine) and land uses in the ASC NEPM The Management Limits avoid or minimise the potential effects of the following and require consideration of site-specific factors to determine the maximum depth to which the limits should apply: • Formation of observable light non-aqueous phase liquid (LNAPL). • Fire and explosive hazards. • Effects on buried infrastructure e.g. penetration of, or damage to, inground services by hydrocarbons. The criteria presented in this guideline are considered relevant for the upper two metres of soil. **Management Limits adopted** TRH fractions F1-F4 in soil (mg/kg) commercial/industrial, Coarse Soil (most conservative value adopted).
Health Screening Levels (HSLs), ASC NEPM (NEPC, 2013)	The ASC NEPM presents health screening levels (HSLs) for petroleum compounds which have been derived through consideration of risks to human health, with the main focus being on the vapour exposure pathway. The HSLs have been calculated using parameters that generally correspond to data available and as such aim to provide levels that are realistic rather than overly conservative. Full detail on their derivation and their application is provided in Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) Technical Report No.10 - Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater. September 2011. (Friebel, E. and Nadebaum, P., 2011).

Adopted SAC	Rationale and Selection
	HSLs adopted: Vapour Intrusion: HSL D – commercial/industrial (Soil texture 'sand' was used for 0 to < 1m and non-petroleum criteria). A site office is currently proposed for the Site; however, there are currently no buildings on Site As noted in CRC CARE Technical Report No. 10 "As vapour intrusion HSLs are not presented for TPH C16-C34 and TPH C34-C40 the soil HSLs for direct contact are the relevant HSLs"
Intrusive Maintenance Worker (Shallow Trench) Health Screening Levels, CRC CARE Technical Report No. 10, Part 2	The CRC Care (CRC Care, 2011) presents the HSLs for vapour intrusion of petroleum compounds relevant to intrusive maintenance workers (shallow trench). Health screening levels for intrusive maintenance workers is adopted for potential future disturbance work into shallow fill (sand) onsite. **HSLs adopted:** Applicable to 0 m to <2 m depth. 'Sand' soil texture was used.
Health Screening Levels for Direct Contact, CRC CARE Technical Report No. 10, Part 2 (Friebel, E. and Nadebaum, P., 2011)	The CRC CARE (Friebel, E. and Nadebaum, P., 2011) presents the HSLs for direct contact of petroleum compounds. **HSLs adopted:** Disturbance maintenance worker
Ecological Assessment Criteria	
Ecological Investigation Levels (EILs) ASC NEPM (NEPC, 2013)	The ASC NEPM requires consideration of Ecological Investigation Levels (EILs) and Ecological Screening Levels (ESLs), principally in the top 2 m of soil which corresponds to the root zone and habitation zone of many species. Therefore, only soil results from the upper 2 m would be screened against ecological criteria. **EILs adopted:** • Table 1B (1) Soil-specific added contaminant limits for aged zinc, aged copper and aged nickel in soil with sample specific pH and CEC • Table 1B (3) Soil-specific added contaminant limits for aged chromium III in soil with a clay content specific to each sample based on the bore logs • Table 1B (4) Generic added contaminant limits for lead in soils irrespective of their physicochemical properties. • Table 1B (5) Generic EILs for aged arsenic and fresh naphthalene in soils irrespective of their physicochemical properties.
Ecological Screening Levels (ESLs), ASC NEPM (NEPC, 2013)	The ASC NEPM Ecological Screening Levels (ESLs) were developed to be protective of environmental concerns by determining the reasonable maximum exposure from site sources for a range of petroleum hydrocarbon compounds and TRH fractions commonly encountered on contaminated sites and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and various land uses. They are generally applicable to the top 2 m of soil and 3 m in arid regions. **ESLs adopted**: Commercial and industrial, applicable to 0 m to <2 m depth based on existing land use. 'Fine' soil texture was used.

8.2 Groundwater

Groundwater was not encountered during disturbance works to a maximum depth of 8 m bgl. No groundwater monitoring wells were installed and therefore, groundwater has not been assessed as part of this DSI & Assessment.

8.3 Waste

The criteria and guidance used for assessment of soils for off-site disposal to landfill is based on the following:

- NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste*. November
- NSW EPA (2014) *Waste Classification Guidelines, Part 4: Acid Sulfate Soils*. November

Soils potentially considered to be excavated natural material and that may be proposed to be beneficially re-used, would be assessed in accordance with the *Resource Recovery Order under Part 9, Clause 93 of the Protection of the Environment Operations (Waste) Regulation 2014 - The excavated natural material order 2014 (ENM exemption*).

9.0 Intrusive Works

9.1 Soil Investigation – Methodology

All activities carried out by AECOM field staff were undertaken following AECOM's standard operating procedures (SOPs). An outline of the soil sampling methodology is found below in **Table 18**.

Table 18 Soil Sampling Methodology

Activity/Item	Details
Service Location	Service clearance was undertaken using AECOM's underground services clearance procedure, including requesting and reviewing Dial Before You Dig service plans, engaging an accredited service locator and reviewing site plans.
Drilling Method	Boreholes were advanced to refusal at all six soil bores using a hand auger (refer to **Figure 2** in **Appendix A**). This ranged from 0.2 m bgl (below ground level) to 0.8 m bgl. At hand auger refusal, mechanical drilling methods were employed. Solid-stem augers were used to drill small increments to reach 1.5 m bgl. Air hammer was employed after this depth. Boreholes were terminated at various depths ranging from 0.9 m bgl to 8.0 m bgl with the exception of the Tank sample location adjacent to the southern boundary of the property which was terminated at 0.4 m bgl. The drilling was completed using a track-mounted geoprobe.
Soil Logging	Soil logging was undertaken in general accordance with the Unified Soil Classification System (USCS) and the AECOM documented standard field procedures. Samples were logged and information was recorded in the field (e.g. soil/rock type, colour, grain size, inclusions, moisture conditions, staining and odour etc.). The bore logs are presented in **Appendix E**.
Soil Screening	Soil sub-samples were placed in snap-lock plastic bags every 0.5 m bgl and the vapour headspace screened in the field for volatile organic compounds (VOCs) using a calibrated PID equipped with a 10.6 eV lamp. Calibration details are provided in **Appendix F**.
Soil Sampling	A new pair of disposable nitrile sampling gloves was used to collect each sample. All samples were collected directly from the hand auger or solid-stem auger. As push-tubing and Standard Penetration Test (SPT) sampling was unable to be conducted due to the hardness of rock, only disturbed soil samples were collected at each borehole. Soil samples were placed directly into laboratory prepared glass jars with Teflon-lined lids and 50 g snap-lock bags for analysis. Soil samples were collected at the surface and at selected intervals throughout the soil profile depending on staining, odour and VOC readings.
Sample Preservation	Soil samples were placed into insulated rigid storage containers chilled with ice. No preservatives were required to be used in the laboratory supplied sampling jars.
Reinstatement of Boreholes	Soil cuttings were used to backfill the boreholes and were placed in the same order in which they were excavated.

Table 19 Soil Analytical Program

Analysis	Number of Samples Analysed by Primary Laboratory (ALS)	Number of Samples Analysed by Secondary Laboratory (Envirolab)
TRH	• 14 primary samples • 1 intra-laboratory duplicates • 3 rinsate blanks • 1 trip blank	• 1 inter-laboratory duplicate

Analysis	Number of Samples Analysed by Primary Laboratory (ALS)	Number of Samples Analysed by Secondary Laboratory (Envirolab)
BTEXN	• 14 primary samples • 1 intra-laboratory duplicates • 3 rinsate blanks • 1 trip spike	• 1 inter-laboratory duplicate
Heavy Metals, PAHs and VOCs	• 14 primary samples • 1 intra-laboratory duplicates	• 1 inter-laboratory duplicate
pH, moisture and Cation Exchange Capacity (CEC)	• 14 primary samples	
Asbestos (absence/presence)	• 5 primary samples • 1 fragment	

9.2 Soil Investigation – Observations

9.2.1 Fill Material

No fill material was identified during drilling works. From review of the 2010 and 2020 aerial photographs, it is noted the Site has been graded and cleared. This is evident from the re-worked surface materials observed on the Site during the drilling.

9.2.2 Natural Soil and Bedrock

The natural red-brown soil observed at surface at all borehole locations was classified as a clayey silt. The grainy texture was characteristic of silt material. It displayed low plasticity when moistened. The soil layer ranged in depth from 0.9 m bgl to 3.2 m bgl across the property.

Three of the boreholes were extended into the bedrock for installation of proposed groundwater wells. The bedrock encountered at these locations comprised a gneiss ranging from extremely weathered to high strength, with some layers of mica also encountered during drilling.

9.2.2.1 Observations of Potential Contamination

No visual or olfactory signs of contamination was observed in the soil samples at the six borehole locations investigated.

A PID was used to measure VOCs in samples. PID values in the soil samples ranged from 1.0-2.0 ppm. It is noted that the PID did not arrive on the first day of drilling so no PID readings were taken from BH002 and BH003. Also, due to a field error no PID readings were taken from the 'Tank' samples. All samples collected from the boreholes were analysed for petroleum hydrocarbons.

A small spill with a hydrocarbon odour was observed on the southern boundary of the Site. The source of the spill was a pool of black liquid on top of an IBC. Staining was also observed in the soil directly adjacent to the IBC. The accessible part of the stained soil comprised of an area approximately 1.0 m by 0.3 m. It is possible that the contaminant had spread to under some of the other dumped waste in proximity to the IBC. A hand auger was used at this location to collect samples till refusal or visual evidence of non-contaminated soil.

9.2.3 Groundwater

There were no observations of moisture in the soil and bedrock at any boreholes to depth. Groundwater was not encountered in the investigation. The deeper boreholes (BH001, BH005, BH006) were terminated as the depth exceeded the depths proposed for construction works. BH005 was the deepest borehole and terminated at 8.0 m bgl.

9.3 Soil Investigation – Analytical Results

9.3.1 Site Suitability Assessment Criteria

The soil analytical results were compared to the adopted SAC specified in **Table 17** and are tabulated in **Table T1** for the assessment of human health and **Table T2** for the assessment of ecological receptors in **Appendix H**. A summary of the results is provided below:

- No asbestos was detected in the fragment samples collected or in the soil samples analysed;
- All soil samples reported concentrations of the contaminants analysed below the adopted human health and ecological assessment criteria for commercial industrial land use with the exception of the following:
  - Tank 0.0 to 0.1 m bgs:
    - TRH C10-C16 concentration (1240 mg/kg) exceeded the HSL D for vapour intrusion 0-1 m (137 mg/kg), the ESL (170 mg/kg) and the management limit (1000 mg/kg);
    - TRH C16-C34 concentration (63,600 mg/kg) exceeded the CRC Care HSL for direct contact (27,000 mg/kg), the ESL (2500 mg/kg) and the management limit (5000 mg/kg); and
    - TRH C34-C40 concentration (12,500 mg/kg) exceeded the ESL (6600 mg/kg) and the management limit (10,000 mg/kg).
  - Tank 0.1 to 0.2 m bgs:
    - TRH C10-C16 concentration (1320 mg/kg) exceeded the HSL D for vapour intrusion 0-1 m (137 mg/kg), the ESL (170 mg/kg) and the management limit (1000 mg/kg); and
    - C16-C34 concentration (19,600 mg/kg) exceeded the ESL (2500 mg/kg) and the management limit (5000 mg/kg).
  - Tank 0.2 to 0.3 m bgs:
    - TRH C10-C16 concentration (1560 mg/kg) exceeded the HSL D for vapour intrusion 0-1 m (137 mg/kg), the ESL (170 mg/kg) and the management limit (1000 mg/kg); and
    - TRH C16-C34 concentration (30,900 mg/kg) exceeded the CRC Care HSL for direct contact (27,000 mg/kg), the ESL (2500 mg/kg) and the management limit (5000 mg/kg).
  - Tank 0.3 to 0.4 m bgs:
    - TRH C10-C16 concentration (360 mg/kg) exceeded the HSL D for vapour intrusion 0-1 m (137 mg/kg); and
    - TRH C16-C34 concentration (5900 mg/kg) exceeded the ESL (2500 mg/kg) and the management limit (5000 mg/kg)

9.3.2 Waste Assessment Criteria

All soil analytical results were also compared to the waste classification criteria specified in **Section 8.3** and are tabulated in **Table T3** in **Appendix H**. The following sample locations exceeded the adopted waste criteria for General Solid Waste:

- Sample Tank 0.0 to 0.1 m bgs exceeded the CT2 and SCC2 general solid waste criteria for TPH C10-C36 indicating the material would be classified as Hazardous Solid Waste; and
- Samples Tank 0.1 to 0.2 m bgs and 0.2 to 0.3 m bgs exceeded the CT1 and SCC1 general solid waste criteria for TPH C10-C36 indicating the material would be classified as Restricted Solid Waste.

The material from all other sample locations analysed would be classified as General Solid Waste.

9.3.3 Beneficial Reuse Criteria

The soil analytical results were also compared to the absolute maximum concentration in the NSW EPA (2014) Resource Recovery Order under Part 9, regulation 93 of the *Protection of the*

Environment Operations (Waste) Regulation 2014 – The excavated natural material order 2014 and are tabulated in **Table T4** in **Appendix H**. The natural materials encountered at the Site overlying bedrock can be classified as ENM with the exception of the following sample locations:

- Tank 0.0-0.1 m bgs TRH C10-C36 concentration (71,300 mg/kg) exceeded the criteria (500 mg/kg) and zinc concentration (345 mg/kg) exceeded the criteria (300 mg/kg);
- Tank 0.1-0.2 m bgs TRH C10-C36 concentration (22,800 mg/kg) exceeded the criteria (500 mg/kg);
- Tank 0.2-0.3 m bgs TRH C10-C36 concentration (35,600 mg/kg) exceeded the criteria (500 mg/kg); and
- Tank 0.3-0.4 m bgs TRH C10-C36 concentration (6800 mg/kg) exceeded the criteria (500 mg/kg).

Bedrock encountered at the Site, if excavated, would be classified as Virgin Excavated Natural Material (VENM) as defined in the POEO Act.

9.4 Data Validation

The data validation procedure employed in the assessment of the field and laboratory QA / QC data indicated that the reported analytical results are representative of soil conditions at the sample locations investigated and that the overall quality of the analytical data produced is reliable for the purpose of this DSI & Assessment. Refer to **Appendix I** for further details.

10.0 Updated Conceptual Site Model

Based on the results of the DSI & Assessment and in accordance with the ASC NEPM, a preliminary CSM has been developed for the Site as presented in **Section 7.0**. Based on the finding of this soil investigation, the preliminary CSM has been refined and is outlined in the sections below.

Table 20 Updated Conceptual Site Model

Receptors	Complete or Potentially Complete Linkages
Onsite Human Health Construction workers AGL workers	*Soil: Yes, complete linkage* • Exceedances of the HSL for direct contact and the management limits for TRH in the vicinity of sample location 'Tank' at 0.0-0.1 and 0.2-0.3 m bgl, refer to **Section 9.3.1**. *Soil Vapour: No, incomplete linkage based on no buildings currently on Site. The Site should be remediated prior to development and construction of Site office building.* • Exceedances of the HSL D vapour intrusion sand 0-1 m in the vicinity of sample location 'Tank' all samples collected to 0.4 m bgl; however, depth of impact not delineated, refer to **Section 9.3.1**. • As noted in CRC CARE "As vapour intrusion HSLs are not presented for TPH C16-C34 and TPH C34-C40 the soil HSLs for direct contact are the relevant HSLs. *Groundwater: No, incomplete linkage* • Groundwater was not encountered beneath the Site to a maximum depth of 8 m bgl, therefore any migration pathway via groundwater is incomplete.
Offsite Human Health Disturbance maintenance workers excavating adjacent ground	*No, incomplete* • Groundwater was not encountered beneath the Site to a maximum depth of 8 m bgl, therefore any migration pathway via groundwater is incomplete. • There is potential for leaching of soil contaminants to surface water during heavy rainfall and off-site migration by overland flow to the ephemeral creek east of the Site. It is considered that TRH from localised impacts would volatilise and degrade over this distance and is therefore unlikely to present a risk to off-site human health and ecological receptors.
Onsite Ecological Terrestrial soil environments	*Yes, complete based on current data set* • Exceedances for ASC NEPM (NEPC, 2013) ESLs for TRH in the vicinity of sample location 'Tank' at a maximum depth of 0.4 m bgl; however, depth of impact not delineated, refer to **Section 9.3.1**.
Offsite Ecological Ephemeral Creek to east of the Site	*No, incomplete* • There is potential for leaching of soil contaminants to surface water during heavy rainfall and off-site migration by overland flow to the ephemeral creek east of the Site. It is considered that TRH from localised impacts would volatilise and degrade over this distance and is therefore unlikely to present a risk to off-site human health and ecological receptors.

11.0 Conclusions

A Site inspection conducted by AECOM on 14 January 2021 indicated the presence of waste materials such as metal, wood and tyre waste, and infrastructure, including truck drop trailers. The Site was also used for storage of vehicle fuels and oils in IBCs, drums and jerry cans, with evidence of staining in the vicinity of the IBC.

Two stockpiles were visible on the Site, the material appeared to be similar to that encountered in boreholes, and no observations of contamination were made for the surface of the stockpiles.

The soil investigation identified localised petroleum hydrocarbon impacts in the vicinity of an IBC in the southern portion of the Site, that exceed the human health and ecological criteria for ongoing commercial and/or industrial land use. The material at these locations was classified in accordance with NSW EPA waste classification guidelines as General Solid Waste, Restricted Solid Waste and Hazardous Solid Waste depending on depth.

No groundwater was encountered during the soil investigation to a depth of 8 m bgl.

The updated CSM (refer to **Section 10.0**) confirmed a complete source pathway receptor linkage from direct contact with localised petroleum hydrocarbon impacted surface soil by on-site commercial and intrusive maintenance workers and ecological receptors within the vicinity of sample Tank location adjacent to the southern boundary. There is also potential for leaching of soil contaminants to surface water during heavy rainfall and off-site migration by overland flow to the ephemeral creek east of the Site. It is considered that localised TRH impacts would volatilise and degrade over this distance and is therefore unlikely to present a risk to off-site human health and ecological receptors.

These complete and potential linkages would be considered as part of the remedial works prior to proposed construction works at the Site and comprise the development of a CEMP to manage identified contamination risks on-site.

AECOM considers the petroleum hydrocarbon impacts identified during the investigation to be localised and that the Site can be made suitable for commercial and/or industrial land use following recommended remedial works and management documented in **Section 12.0**.

12.0 Recommendations

Based on the findings of this DSI & Assessment, AECOM recommends the following be undertaken prior to commencement of development works:

- Preparation of a Remedial Action Plan (RAP) in accordance with *State Environmental Planning Policy No 55-Remediation of Land*, for the excavation of localised petroleum hydrocarbon impacted material within the vicinity of the IBC at the southern boundary. The stained and odorous soils were identified in the vicinity of AECOM sample location 'Tank' (observed to comprise an area of 1 m x 0.5 m x 0.5 m = 0.25 m³) and were considered not suitable for the proposed commercial/industrial land use.
- Preparation of a CEMP incorporating an unexpected finds procedure for implementation during the Project which also encompasses all construction activities associated with the Project. The CEMP should include but not be limited to the controls recommended in **Table 21**.
- In the event that material is required to be taken off-site for installation of the proposed transmission pole (off-site within the TransGrid Broken Hill Substation, not assessed as part of this DSI & Assessment), then collection of samples of material to allow for waste classification in accordance with NSW EPA (2014) waste guidelines.
- Removal and appropriate disposal of any on-site waste in accordance with the CEMP and relevant NSW waste legislation.
- Preparation of waste classification letter(s) to allow for materials to be disposed off-site to a licensed landfill in accordance with NSW EPA guidelines (e.g. material from the Tank excavation area, the proposed transmission pole locations and any materials surplus to Site requirements including the two stockpiles observed during the Site inspection) (if required).

Table 21 Recommended procedures and controls

Management issue	Summary of procedures and controls
Waste	• Waste management plans would include procedures for handling and storing spoil, including potentially or known contaminated soil/fill in accordance with the POEO Act. • Protocols for waste classification for off-site disposal or assessment under a resource recovery exemption and waste tracking.
Stockpile management and spoil handling	• Stockpile management procedures for segregating spoil and preventing cross-contamination of clean spoil (VENM or ENM) with potentially contaminated soil.
Surface water runoff erosion of contaminated soils	• Procedures for the prevention of erosion and management of potentially contaminated stormwater runoff would be detailed in the CEMP and a soil and water management plan included as an appendix to the CEMP.
Unexpected finds	• In the event an unexpected find of contamination is encountered during construction, work in the affected area would cease until an appropriately qualified environmental consultant can inspect the find and provide a recommendation on further investigation, remediation or control measures, as deemed appropriate. • Further assessment and management/remediation, where required, would be undertaken in accordance with section 105 of the CLM Act. • An unexpected find may include soil discolouration, offensive odours, buried waste or asbestos containing materials (ACM), for example. • Based on the findings from this DSI & Assessment groundwater is not anticipated to be encountered during excavation works down to 8 m bgl, encountering groundwater above 8 m bgl should be considered as part of the unexpected finds procedure.

Management issue	Summary of procedures and controls
Prevention of new/cross-contamination	• Removal of waste, plant and equipment with adequate spill response kits. • Chemicals, oils and fuels would be handled to avoid spills during removal and transport. • Emergency response plans, clean-up and reporting procedures would be developed. • Site inspection to confirm that no additional spills occurred during removal of plant/machinery drums, IBCs, jerry cans containing waste oils and mechanical fluids. If stained or odorous soils are noted during the site inspection, then additional soil samples would be collected.

13.0 References

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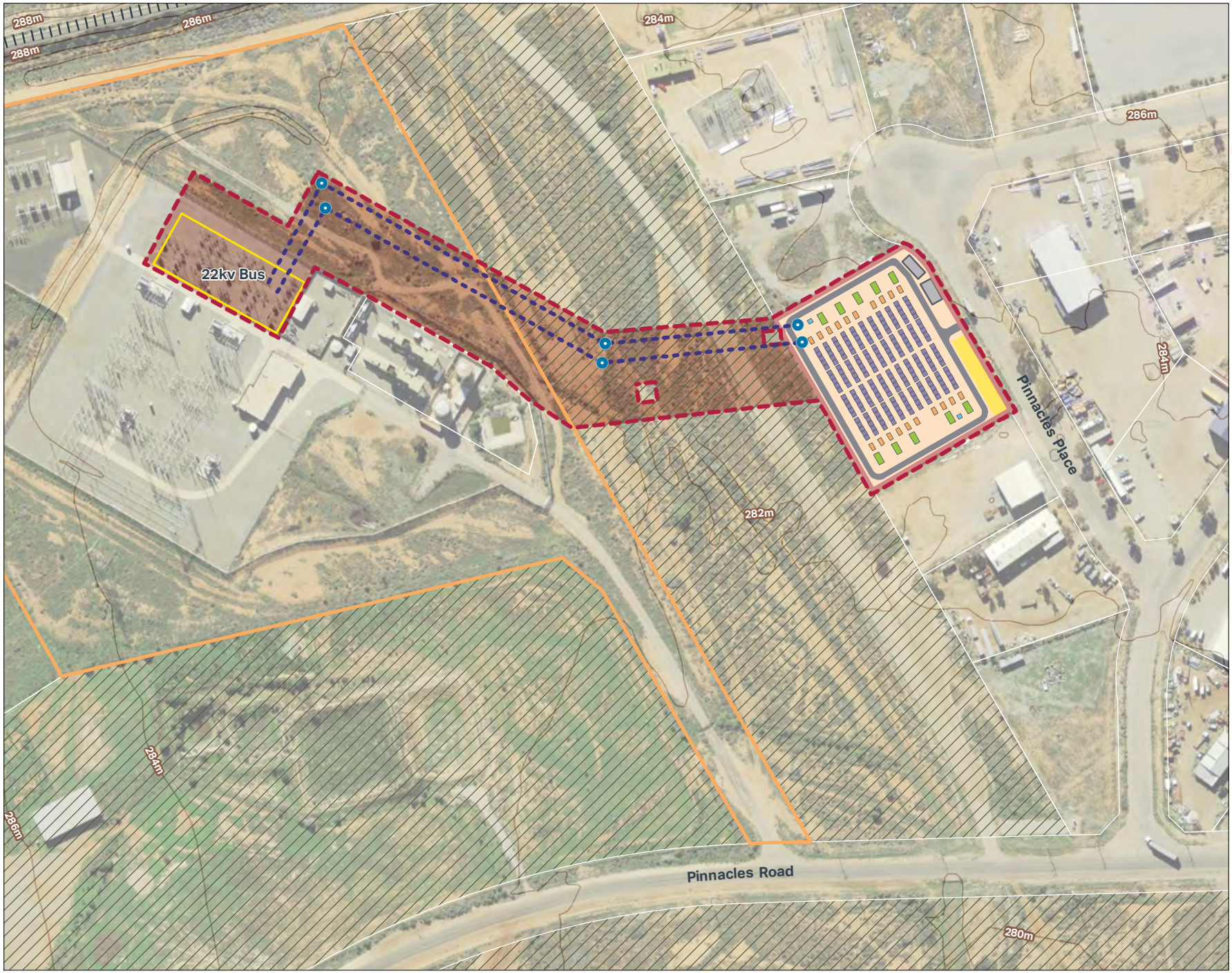
NSW EPA, 2017. Guidelines for the NSW Site Auditor Scheme (3rd Edition). October

NSW EPA, 2020. Consultants reporting on contaminated land, Contaminated Land Guidelines. 5 May

Appendix A

Figures



AECOM

N

0 30 60 m

Legend

- Project Area
- Site
- TransGrid Broken Hill Substation
- 22kV Bus
- Commons
- Railway
- Contour
- Indicative overhead transmission line
- Indicative transmission line pole

Site features

- Office building
- Battery
- Inverter
- Medium voltage auxillary switchboards
- Transformer
- Laydown area/operational parking area
- Access road
- Permeable surface

FIGURE 1:

PROJECT AREA LAYOUT

Indicative only, subject to detailed design.

Source: © Department of Customer Service 2020

AECOM

N

0 10 20 m

Legend

- Project Area
- The Site
- Indicative overhead transmission line
- Indicative transmission line pole
- Borehole
- Sample location
- Stockpile

FIGURE 2:
BOREHOLE AND SAMPLING LOCATIONS

Indicative only, subject to detailed design.

Source: © Department of Customer Service 2020

Appendix B

Lotsearch Report, EPBC Search Report and UXO Search Map

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Date: 17 Dec 2020 09:37:27

Reference: LS016871 EP

Address: 70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Cadastre Boundaries	NSW Department of Finance, Services & Innovation	13/11/2020	13/11/2020	Quarterly	-	-	-	-
Topographic Data	NSW Department of Finance, Services & Innovation	25/06/2019	25/06/2019	As required	-	-	-	-
List of NSW contaminated sites notified to EPA	Environment Protection Authority	14/12/2020	14/12/2020	Monthly	1000	0	0	2
Contaminated Land Records of Notice	Environment Protection Authority	03/12/2020	03/12/2020	Monthly	1000	0	0	0
Former Gasworks	Environment Protection Authority	10/12/2020	11/10/2017	Monthly	1000	0	0	0
National Waste Management Facilities Database	Geoscience Australia	12/11/2020	07/03/2017	Quarterly	1000	0	0	1
National Liquid Fuel Facilities	Geoscience Australia	12/11/2020	13/07/2012	Quarterly	1000	0	0	4
EPA PFAS Investigation Program	Environment Protection Authority	14/12/2020	23/11/2020	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	08/12/2020	08/12/2020	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	08/12/2020	08/12/2020	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	07/12/2020	07/12/2020	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	14/12/2020	14/12/2020	Monthly	2000	0	0	0
EPA Other Sites with Contamination Issues	Environment Protection Authority	04/02/2020	13/12/2018	Annually	1000	0	0	0
Licensed Activities under the POEO Act 1997	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	3	3	10
Delicensed POEO Activities still regulated by the EPA	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	0	0	0
Former POEO Licensed Activities now revoked or surrendered	Environment Protection Authority	10/12/2020	10/12/2020	Monthly	1000	0	3	6
UBD Business Directories (Premise & Intersection Matches)	Hardie Grant			Not required	150	0	0	0
UBD Business Directories (Road & Area Matches)	Hardie Grant			Not required	150	-	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Premise & Intersection Matches)	Hardie Grant			Not required	500	0	0	0
UBD Business Directory Dry Cleaners & Motor Garages/Service Stations (Road & Area Matches)	Hardie Grant			Not required	500	-	0	0
Points of Interest	NSW Department of Finance, Services & Innovation	30/03/2020	30/03/2020	Quarterly	1000	0	0	2
Tanks (Areas)	NSW Department of Customer Service - Spatial Services	30/03/2020	30/03/2020	Quarterly	1000	0	0	1
Tanks (Points)	NSW Department of Customer Service - Spatial Services	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
Major Easements	NSW Department of Finance, Services & Innovation	30/03/2020	30/03/2020	Quarterly	1000	0	0	6
State Forest	Forestry Corporation of NSW	18/01/2018	18/01/2018	As required	1000	0	0	0
NSW National Parks and Wildlife Service Reserves	NSW Office of Environment & Heritage	21/01/2020	30/09/2019	Annually	1000	0	0	0
Hydrogeology Map of Australia	Commonwealth of Australia (Geoscience Australia)	08/10/2014	17/03/2000	As required	1000	1	1	1
Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018	NSW Department of Planning, Industry and Environment	26/10/2020	21/02/2018	As required	1000	0	0	0

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Groundwater Boreholes	NSW Dept. of Primary Industries - Water NSW; Commonwealth of Australia (Bureau of Meteorology)	24/07/2018	23/07/2018	Annually	2000	0	0	26
Geological Units 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	1	-	4
Geological Structures 1:250,000	NSW Department of Planning, Industry and Environment	20/08/2014		None planned	1000	0	-	0
Naturally Occurring Asbestos Potential	NSW Dept. of Industry, Resources & Energy	04/12/2015	24/09/2015	Unknown	1000	0	0	0
Atlas of Australian Soils	Australian Bureau of Agriculture and Resource Economics and Sciences (ABARES)	19/05/2017	17/02/2011	As required	1000	1	1	1
Environmental Planning Instrument Acid Sulfate Soils	NSW Department of Planning, Industry and Environment	04/12/2020	03/07/2020	Monthly	500	0	-	-
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	1
Dryland Salinity - National Assessment	National Land and Water Resources Audit	18/07/2014	12/05/2013	None planned	1000	0	0	0
Dryland Salinity Potential of Western Sydney	NSW Department of Planning, Industry and Environment	12/05/2017	01/01/2002	None planned	1000	-	-	-
Mining Subsidence Districts	NSW Department of Customer Service - Subsidence Advisory NSW	30/03/2020	30/03/2020	Quarterly	1000	0	0	0
Current Mining Titles	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	2	2	4
Mining Title Applications	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	0	0	0
Historic Mining Titles	NSW Department of Industry	07/12/2020	07/12/2020	Monthly	1000	3	3	13
Environmental Planning Instrument SEPP State Significant Precincts	NSW Department of Planning, Industry and Environment	04/12/2020	07/12/2018	Monthly	1000	0	0	0
Environmental Planning Instrument Land Zoning	NSW Department of Planning, Industry and Environment	04/12/2020	27/11/2020	Monthly	1000	1	1	12
Commonwealth Heritage List	Australian Government Department of the Agriculture, Water and the Environment	24/11/2020	20/11/2019	Quarterly	1000	0	0	0
National Heritage List	Australian Government Department of the Agriculture, Water and the Environment	24/11/2020	20/11/2019	Quarterly	1000	1	1	1
State Heritage Register - Curtilages	NSW Department of Planning, Industry and Environment	12/11/2020	02/07/2020	Quarterly	1000	0	0	0
Environmental Planning Instrument Heritage	NSW Department of Planning, Industry and Environment	04/12/2020	27/11/2020	Monthly	1000	0	0	1
Bush Fire Prone Land	NSW Rural Fire Service	15/12/2020	28/11/2020	Weekly	1000	1	2	2
Ramsar Wetlands of Australia	Department of the Agriculture, Water and the Environment	08/10/2014	24/06/2011	As required	1000	0	0	0
Groundwater Dependent Ecosystems	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	0
Inflow Dependent Ecosystems Likelihood	Bureau of Meteorology	14/08/2017	15/05/2017	Unknown	1000	0	0	0
NSW BioNet Species Sightings	NSW Office of Environment & Heritage	14/12/2020	14/12/2020	Weekly	10000	-	-	-

Site Diagram

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Legend

- Site Boundary
- Internal Parcel Boundaries

Total Area: 8100m^2

Total Perimeter: 359m

Scale: 0 20 40 Meters

Data Sources: Aerial Imagery © Aerometrex Pty Ltd

Disclaimers:

Measurements are approximate only and may have been simplified or smaller lengths removed for readability.

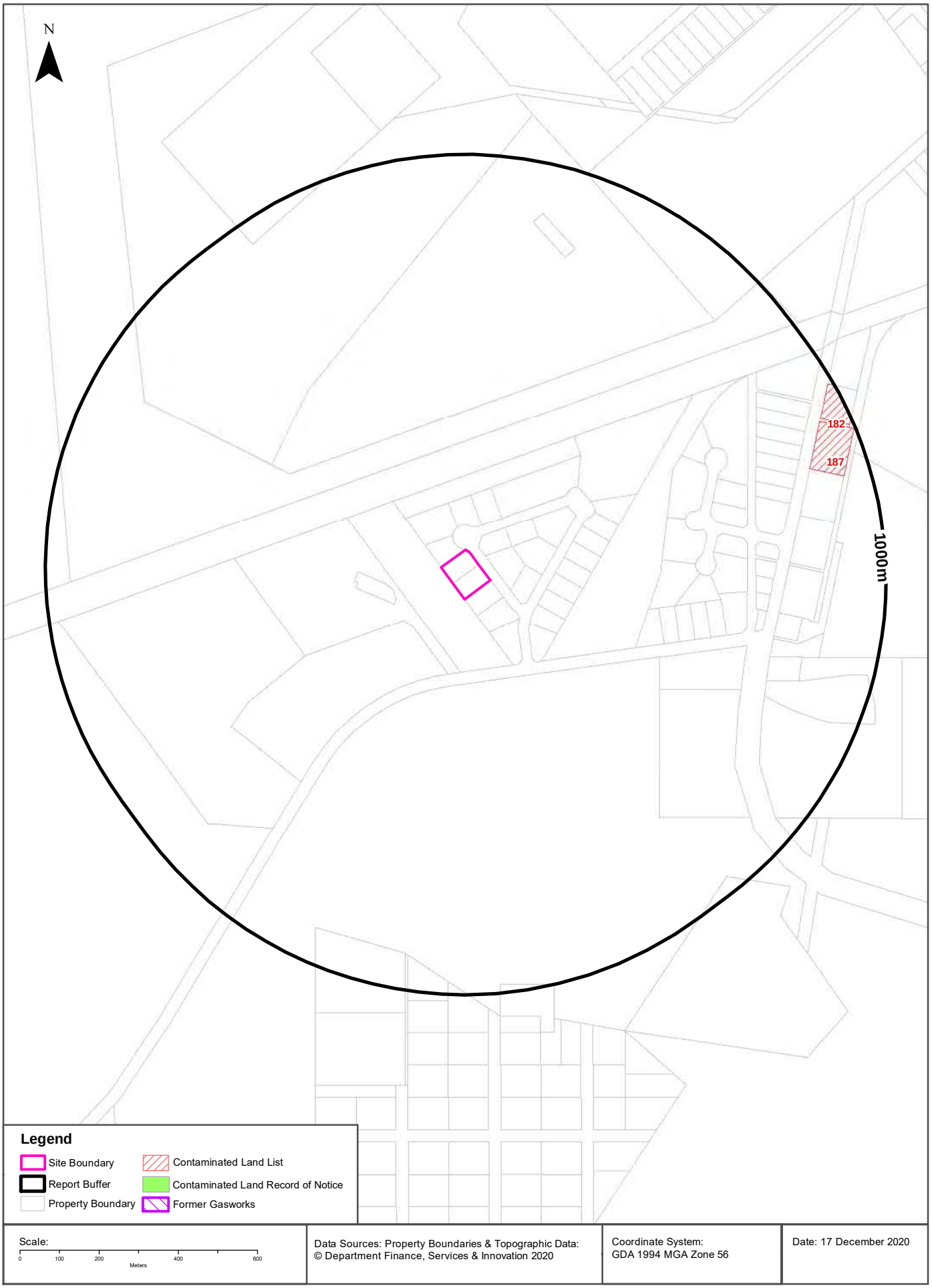
Parcels that make up a small percentage of the total site area have not been labelled for increased legibility.

Coordinate System: GDA 1994 MGA Zone 56

Date: 17 December 2020

Contaminated Land

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Contaminated Land

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

List of NSW contaminated sites notified to EPA

Records from the NSW EPA Contaminated Land list within the dataset buffer:

Map Id	Site	Address	Suburb	Activity	Management Class	Status	Location Confidence	Dist (m)	Direction
187	Tasco Petroleum (Former Mobil) Depot	5 Kanandah Road	Broken Hill	Other Petroleum	Regulation under CLM Act not required	Current EPA List	Premise Match	853m	East
182	Former Caltex Depot	3 Kanandah Road	Broken Hill	Service Station	Regulation under CLM Act not required	Current EPA List	Premise Match	928m	North East

The values within the EPA site management class in the table above, are given more detailed explanations in the table below:

EPA site management class	Explanation
Contamination being managed via the planning process (EP&A Act)	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. The contamination of this site is managed by the consent authority under the Environmental Planning and Assessment Act 1979 (EP&A Act) planning approval process, with EPA involvement as necessary to ensure significant contamination is adequately addressed. The consent authority is typically a local council or the Department of Planning and Environment.
Contamination currently regulated under CLM Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). Management of the contamination is regulated by the EPA under the CLM Act. Regulatory notices are available on the EPA's Contaminated Land Public Record of Notices.
Contamination currently regulated under POEO Act	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation. Management of the contamination is regulated under the Protection of the Environment Operations Act 1997 (POEO Act). The EPA's regulatory actions under the POEO Act are available on the POEO public register.
Contamination formerly regulated under the CLM Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation under the Contaminated Land Management Act 1997 (CLM Act). The contamination was addressed under the CLM Act.
Contamination formerly regulated under the POEO Act	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed under the Protection of the Environment Operations Act 1997 (POEO Act).
Contamination was addressed via the planning process (EP&A Act)	The EPA has determined that the contamination is no longer significant enough to warrant regulation. The contamination was addressed by the appropriate consent authority via the planning process under the Environmental Planning and Assessment Act 1979 (EP&A Act).
Ongoing maintenance required to manage residual contamination (CLM Act)	The EPA has determined that ongoing maintenance, under the Contaminated Land Management Act 1997 (CLM Act), is required to manage the residual contamination. Regulatory notices under the CLM Act are available on the EPA's Contaminated Land Public Record of Notices.
Regulation being finalised	The EPA has completed an assessment of the contamination and decided that the contamination is significant enough to warrant regulation under the Contaminated Land Management Act 1997. A regulatory approach is being finalised.
Regulation under the CLM Act not required	The EPA has completed an assessment of the contamination and decided that regulation under the Contaminated Land Management Act 1997 is not required.
Under assessment	The contamination is being assessed by the EPA to determine whether regulation is required. The EPA may require further information to complete the assessment. For example, the completion of management actions regulated under the planning process or Protection of the Environment Operations Act 1997. Alternatively, the EPA may require information via a notice issued under s77 of the Contaminated Land Management Act 1997 or issue a Preliminary Investigation Order.

NSW EPA Contaminated Land List Data Source: Environment Protection Authority

Contaminated Land

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Contaminated Land: Records of Notice

Record of Notices within the dataset buffer:

Map Id	Name	Address	Suburb	Notices	Area No	Location Confidence	Distance	Direction
N/A	No records in buffer							

Contaminated Land Records of Notice Data Source: Environment Protection Authority

Terms of use and disclaimer for Contaminated Land: Record of Notices, please visit
http://www.epa.nsw.gov.au/clm/clmdisclaimer.htm

Former Gasworks

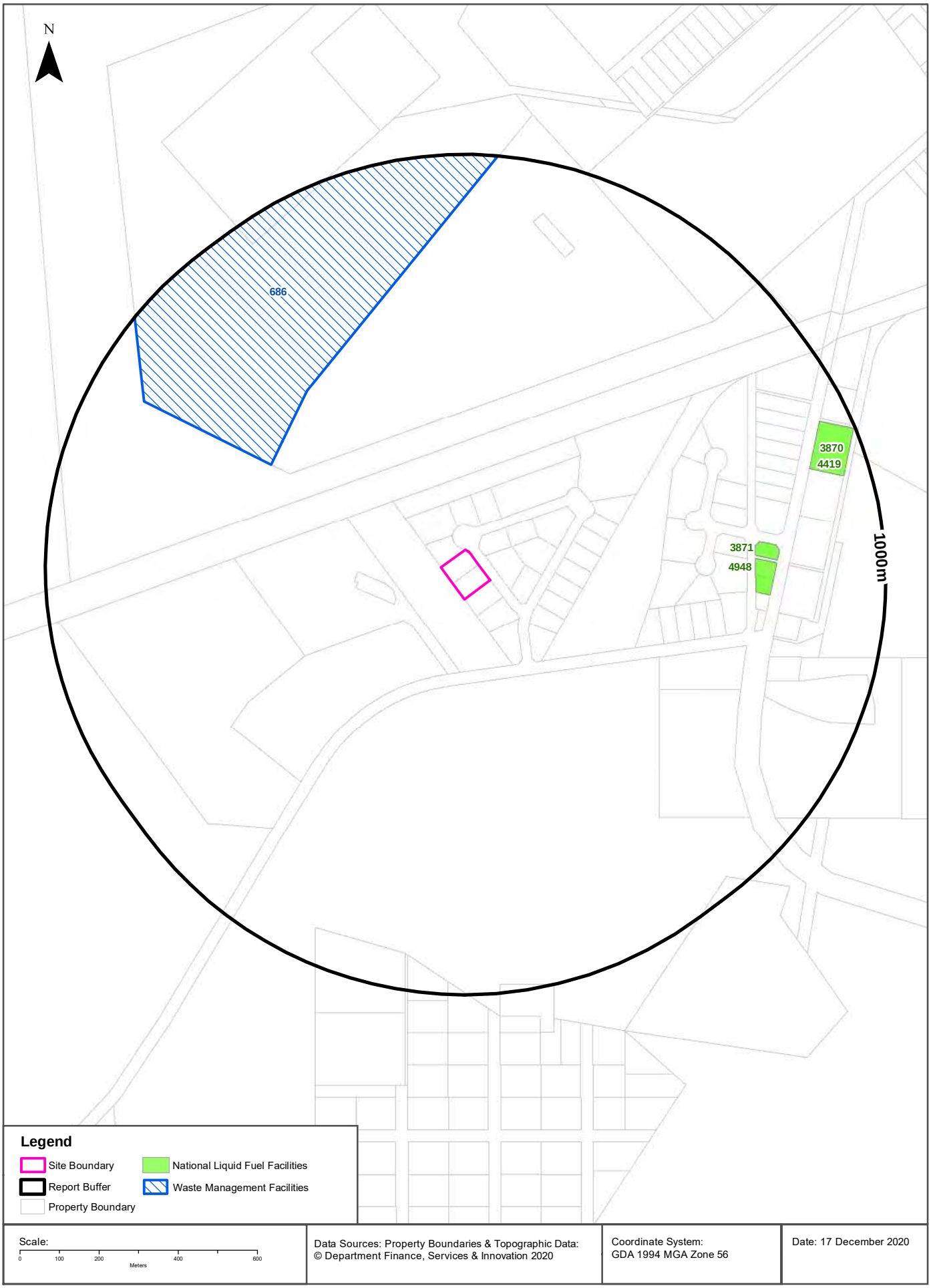
Former Gasworks within the dataset buffer:

Map Id	Location	Council	Further Info	Location Confidence	Distance	Direction
N/A	No records in buffer					

Former Gasworks Data Source: Environment Protection Authority

Waste Management & Liquid Fuel Facilities

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Waste Management & Liquid Fuel Facilities

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site Id	Owner	Name	Address	Suburb	Class	Landfill	Reprocess	Transfer	Comments	Loc Conf	Dist (m)	Direction
686	Broken Hill City Council	Broken Hill Landfill	Wills Street	Broken Hill	Landfill	Operational				Premise Match	502 m	North West

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist (m)	Direction
4948	ELGAS	Broken Hill	24 Kanandah Road	Broken Hill	Fuel Depot	Operational	Bromson Energy	04/10/2012	Premise Match	670m	East
3871	Independent	Broken Hill	22 Kanandah Road	Broken Hill	Fuel Depot	Operational	Bromson Energy	04/10/2012	Premise Match	673m	East
3870	Caltex	Broken Hill	5 Kanandah Road	Broken Hill	Fuel Depot	Operational	Tasco Inland Australia Pty Ltd	04/10/2012	Premise Match	853m	East
4419	Caltex	Tasco Inland Australia Pty Ltd	18-20 Kanandah Road	Broken Hill	Petrol Station	Operational		25/07/2011	Premise Match	853m	East

PFAS Investigation & Management Programs

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

EPA PFAS Investigation Program

Sites that are part of the EPA PFAS investigation program, within the dataset buffer:

Id	Site	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

EPA PFAS Investigation Program: Environment Protection Authority

Defence PFAS Investigation Program

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Management Program

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Dist	Dir
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Defence 3 Year Regional Contamination Investigation Program

Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

EPA Other Sites with Contamination Issues

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

EPA Other Sites with Contamination Issues

This dataset contains other sites identified on the EPA website as having contamination issues. This dataset currently includes:

- James Hardie asbestos manufacturing and waste disposal sites
- Radiological investigation sites in Hunter's Hill
- Pasminco Lead Abatement Strategy Area

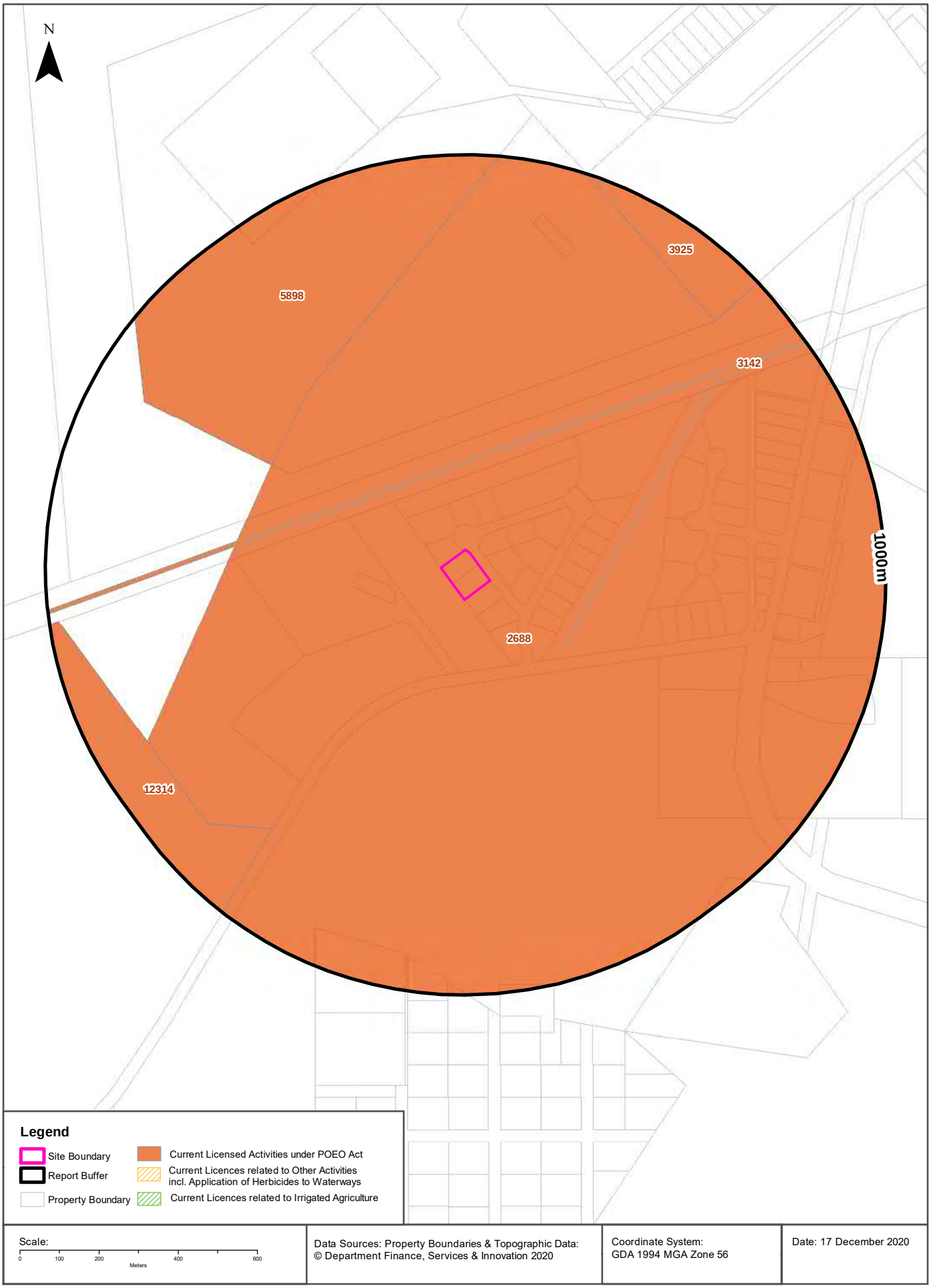
Sites within the dataset buffer:

Site Id	Site Name	Site Address	Dataset	Comments	Location Confidence	Distance	Direction
N/A	No records in buffer						

EPA Other Sites with Contamination Issues: Environment Protection Authority

Current EPA Licensed Activities

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



EPA Activities

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Licensed Activities under the POEO Act 1997

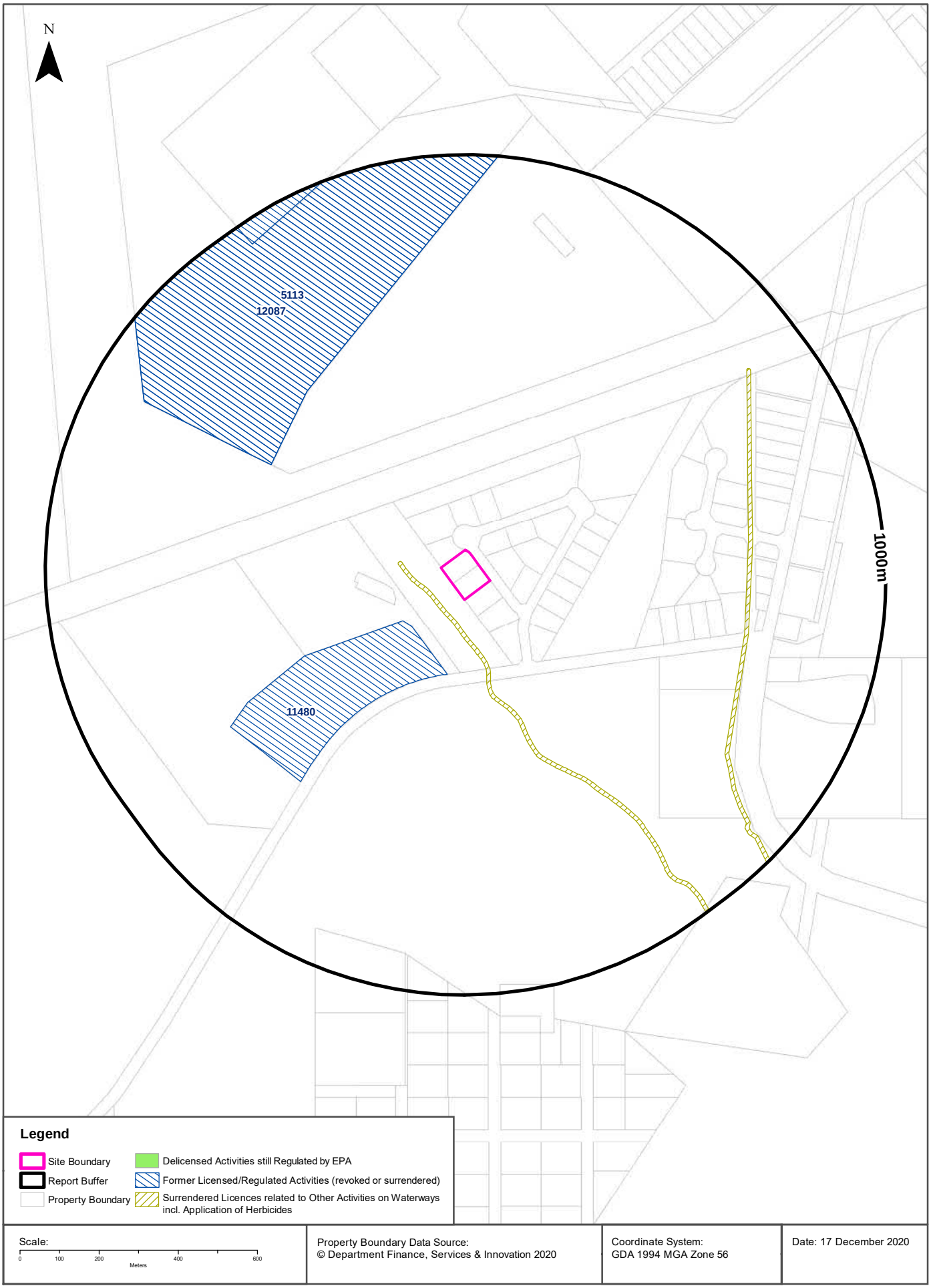
Licensed activities under the Protection of the Environment Operations Act 1997, within the dataset buffer:

EPL	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
2688	PERILYA BROKEN HILL LIMITED	SOUTHERN OPERATIONS	WENTWORTH ROAD	BROKEN HILL	Crushing, grinding or separating	Premise Match	0m	Onsite
2688	PERILYA BROKEN HILL LIMITED	SOUTHERN OPERATIONS	WENTWORTH ROAD	BROKEN HILL	Mineral processing	Premise Match	0m	Onsite
2688	PERILYA BROKEN HILL LIMITED	SOUTHERN OPERATIONS	WENTWORTH ROAD	BROKEN HILL	Mining for minerals	Premise Match	0m	Onsite
3142	AUSTRALIAN RAIL TRACK CORPORATION LIMITED		AUSTRALIAN RAIL TRACK CORPORATION (ARTC) NETWORK, SYDNEY, NSW 2001		Railway systems activities	Network of Features	206m	North
5898	BROKEN HILL CITY COUNCIL	BROKEN HILL WASTE DEPOT	WILLS STREET	BROKEN HILL	Non-thermal treatment of hazardous and other waste	Premise Match	502m	North West
5898	BROKEN HILL CITY COUNCIL	BROKEN HILL WASTE DEPOT	WILLS STREET	BROKEN HILL	Waste disposal by application to land	Premise Match	502m	North West
5898	BROKEN HILL CITY COUNCIL	BROKEN HILL WASTE DEPOT	WILLS STREET	BROKEN HILL	Waste storage - waste tyres	Premise Match	502m	North West
12314	TRONOX MINING AUSTRALIA LIMITED	BROKEN HILL MINERAL SEPARATION PLANT	PINNACLES ROAD	BROKEN HILL	Mineral processing	Premise Match	754m	South West
12314	TRONOX MINING AUSTRALIA LIMITED	BROKEN HILL MINERAL SEPARATION PLANT	PINNACLES ROAD	BROKEN HILL	Mineral waste generation	Premise Match	754m	South West
3925	ESSENTIAL ENERGY	WILLS STREET WASTEWATER TREATMENT PLANT	WILLS STREET	BROKEN HILL	Sewage treatment processing by small plants	Premise Match	852m	North East

POEO Licence Data Source: Environment Protection Authority

Delicensed & Former Licensed EPA Activities

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



EPA Activities

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Delicensed Activities still regulated by the EPA

Delicensed activities still regulated by the EPA, within the dataset buffer:

Licence No	Organisation	Name	Address	Suburb	Activity	Loc Conf	Distance	Direction
N/A	No records in buffer							

Delicensed Activities Data Source: Environment Protection Authority

Former Licensed Activities under the POEO Act 1997, now revoked or surrendered

Former Licensed activities under the Protection of the Environment Operations Act 1997, now revoked or surrendered, within the dataset buffer:

Licence No	Organisation	Location	Status	Issued Date	Activity	Loc Conf	Distance	Direction
4653	LUHRMANN ENVIRONMENT MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW	Surrendered	06/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	51m	-
4838	Robert Orchard	Various Waterways throughout New South Wales - SYDNEY NSW 2000	Surrendered	07/09/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	51m	-
6630	SYDNEY WEED & PEST MANAGEMENT PTY LTD	WATERWAYS THROUGHOUT NSW - PROSPECT, NSW, 2148	Surrendered	09/11/2000	Other Activities / Non Scheduled Activity - Application of Herbicides	Network of Features	51m	-
11480	GHANAM-EL-KAHS PTY LTD	162 PINNACLES ROAD, BROKEN HILL, NSW 2880	Surrendered	17/09/2001	Slaughtering or processing animals	Premise Match	147m	South West
12087	AUSTRALIAN VERMICULTURE PTY LTD	COMPOST FACILITY AT BROKEN HILL LANDFILL, WILLS STREET, BROKEN HILL	Surrendered	01/03/2004	Composting	Premise Match	502m	North West
5113	CONSOLIDATED PLANT AND QUARRIES PTY LTD	PINNACLES ROAD, BROKEN HILL, NSW 2880	Surrendered	20/09/2000	Land-based extractive activity	Premise Match	502m	North West

Former Licensed Activities Data Source: Environment Protection Authority

Historical Business Directories

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Business Directory Records 1950-1991
Premise or Road Intersection Matches

Universal Business Directory records from years 1991, 1970, 1961 & 1950, mapped to a premise or road intersection within the dataset buffer:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer						

Business Directory Records 1950-1991
Road or Area Matches

Universal Business Directory records from years 1991, 1970, 1961 & 1950, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published:

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
	No records in buffer					

Historical Business Directories

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Dry Cleaners, Motor Garages & Service Stations Premise or Road Intersection Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a premise or road intersection, within the dataset buffer.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Property Boundary or Road Intersection	Direction
	No records in buffer						

Dry Cleaners, Motor Garages & Service Stations Road or Area Matches

Dry Cleaners, Motor Garages & Service Stations from UBD Business Directories, mapped to a road or an area, within the dataset buffer. Records are mapped to the road when a building number is not supplied, cannot be found, or the road has been renumbered since the directory was published.

Map Id	Business Activity	Premise	Ref No.	Year	Location Confidence	Distance to Road Corridor or Area
	No records in buffer					

Aerial Imagery 2020

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Scale:	Data Sources: Aerial Imagery © Aerometrex Pty Ltd	Coordinate System: GDA 1994 MGA Zone 56	Date: 17 December 2020

0 30 60 90 120
Meters

Aerial Imagery 2015

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Scale: 0 30 60 90 120 Meters

Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System: GDA 1994 MGA Zone 56

Date: 16 December 2020

Aerial Imagery 2010

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Scale:
0 30 60 90 120
Meters

Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

Date: 16 December 2020

Aerial Imagery 2004

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Scale:
0 30 60 90 120
Meters

Data Source Aerial Imagery: © 2020 Google Inc, used with permission. Google and the Google logo are registered trademarks of Google Inc.

Coordinate System:
GDA 1994 MGA Zone 56

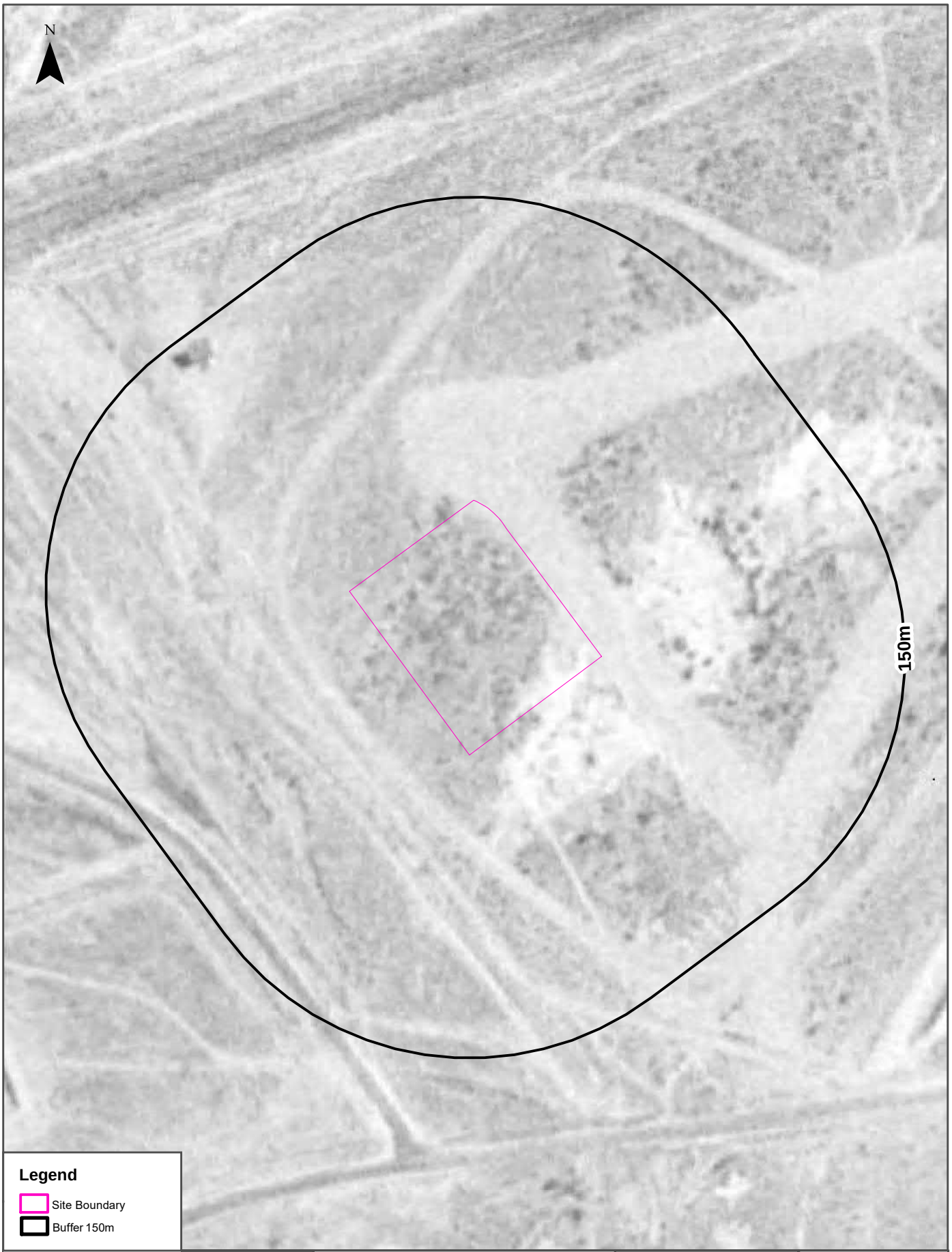
Date: 16 December 2020

Aerial Imagery 1995

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Aerial Imagery 1982

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

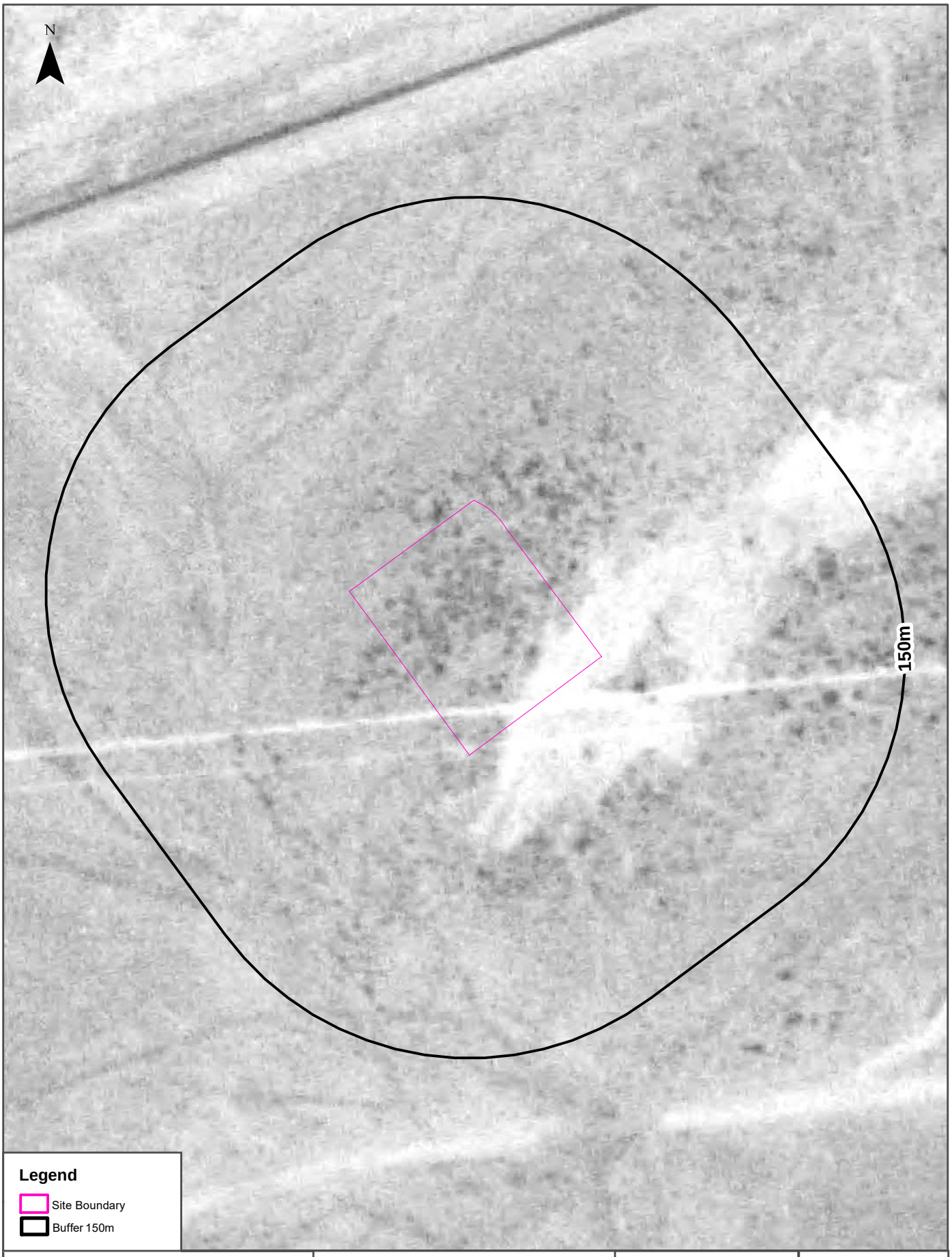


Aerial Imagery 1975

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

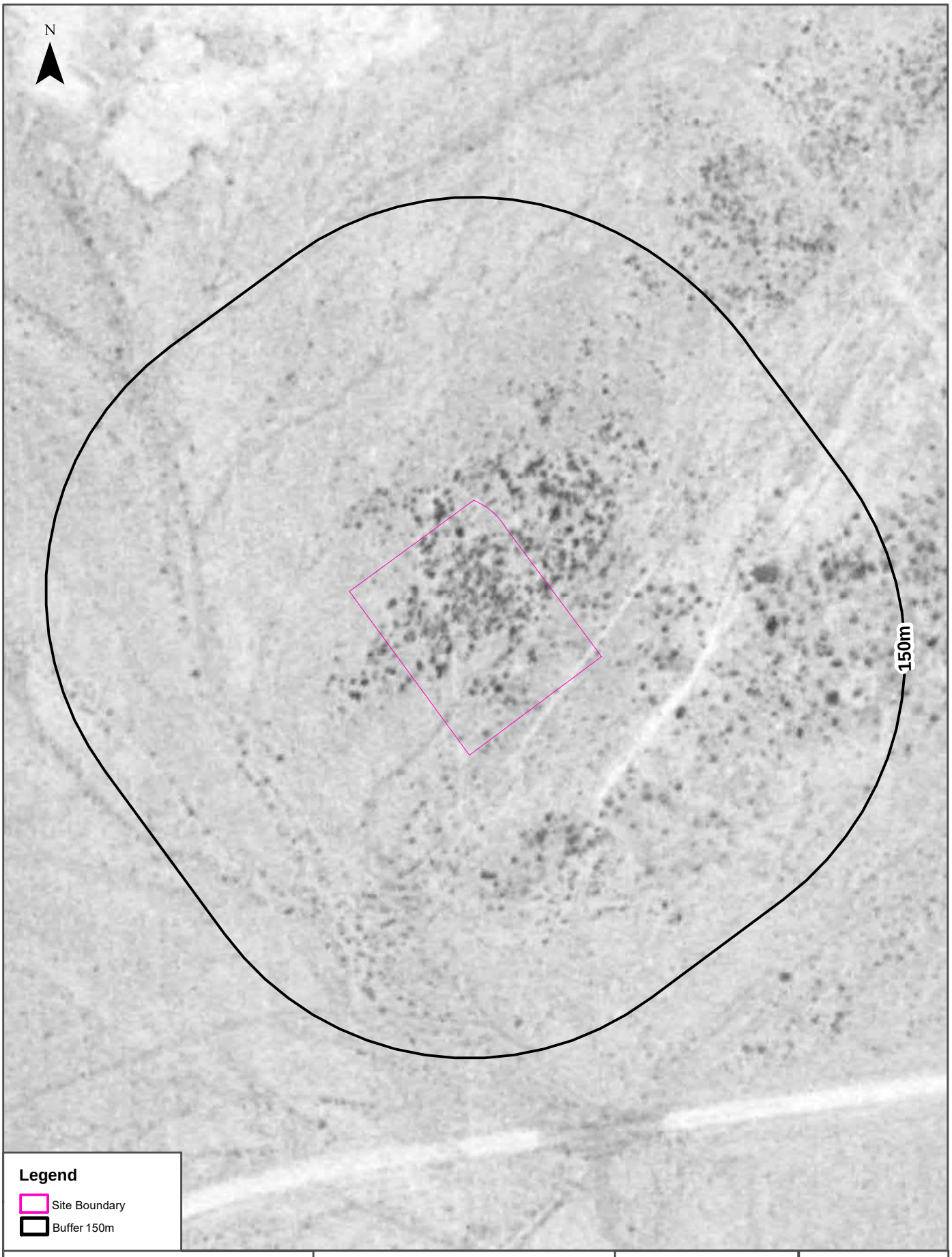
Aerial Imagery 1971

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



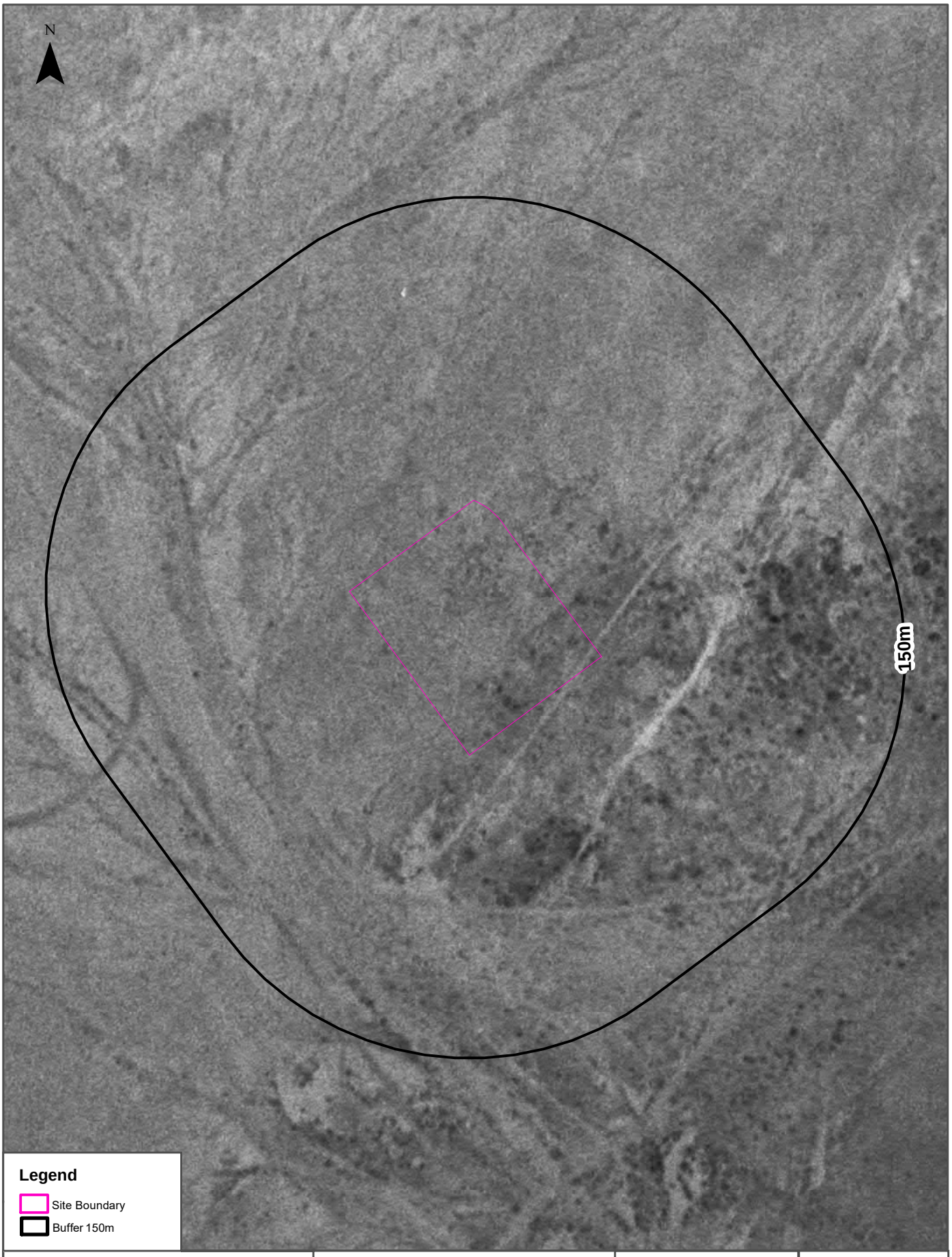
Aerial Imagery 1965

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



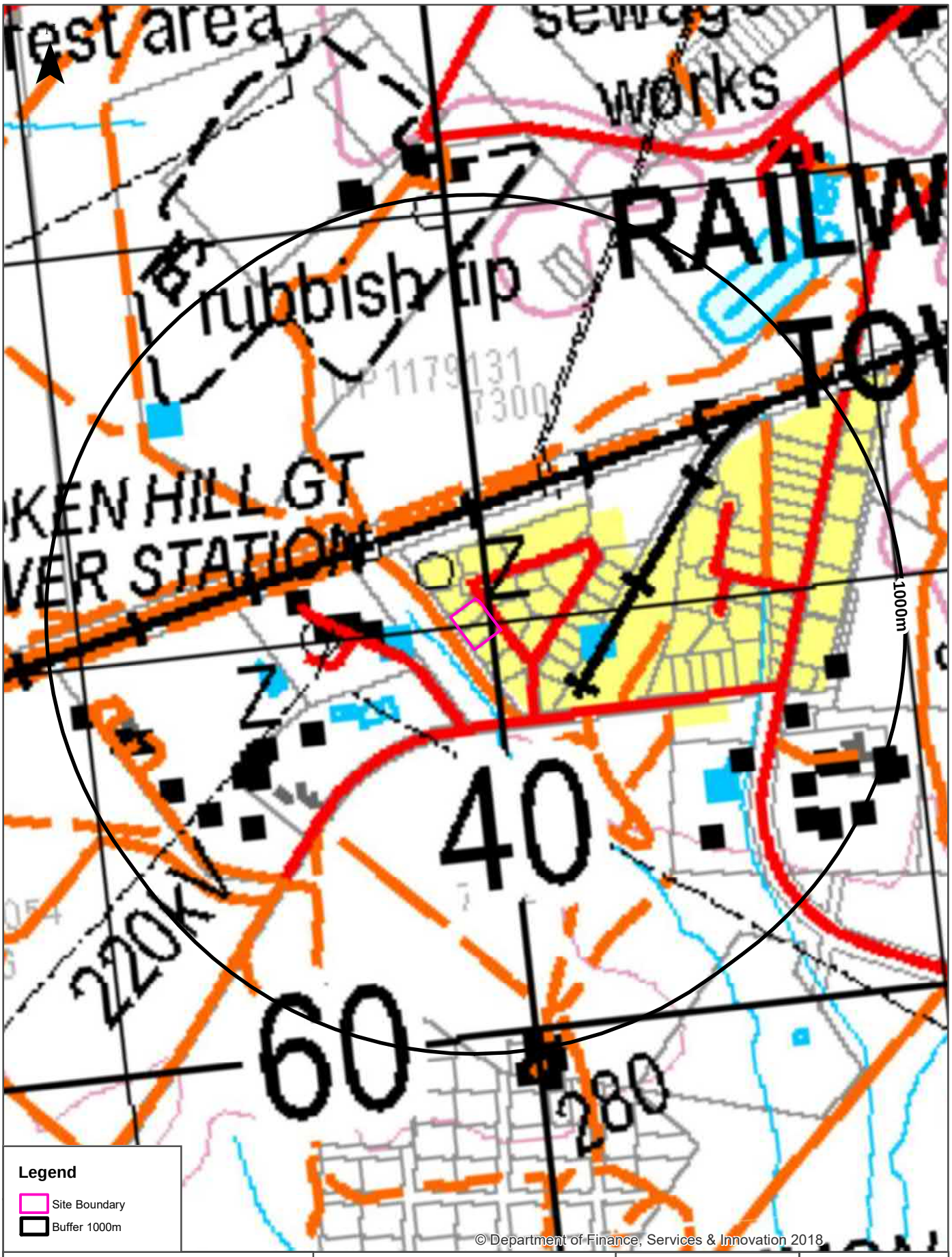
Aerial Imagery 1954

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Topographic Map 2015

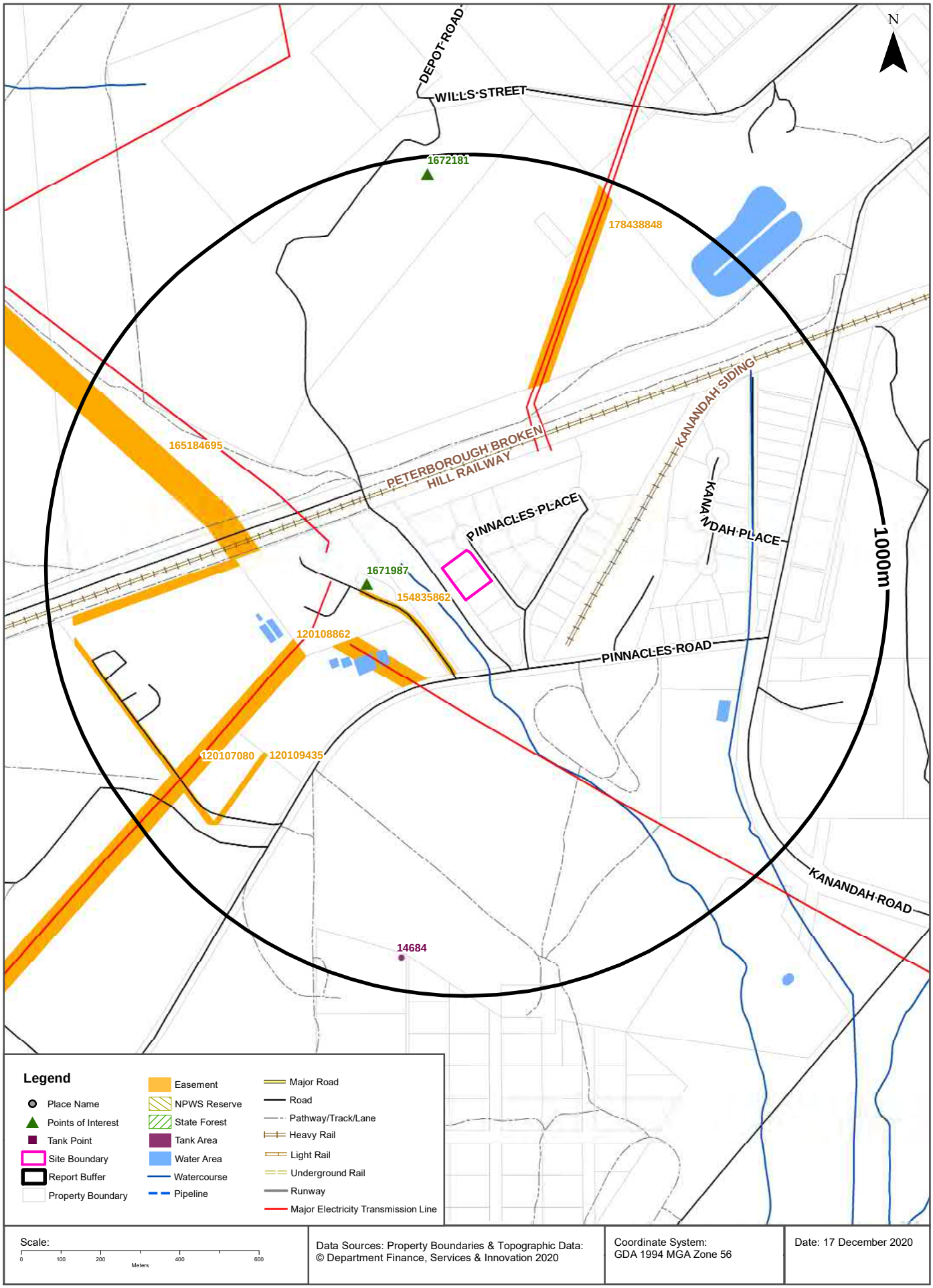
70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Scale: 0 100 200 400 600 Meters	Data Sources: Topographic Map Data © NSW Land and Property Information	Coordinate System: GDA 1994 MGA Zone 56	Date: 17 December 2020

Topographic Features

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Topographic Features

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Points of Interest

What Points of Interest exist within the dataset buffer?

Map Id	Feature Type	Label	Distance	Direction
1671987	Fuel Driven Power Station	BROKEN HILL GT POWER STATION	194m	West
1672181	Rubbish Depot	BROKEN HILL WASTE DEPOT AND LANDFILL	955m	North

Topographic Features

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Tanks (Areas)

What are the Tank Areas located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
14684	Water	Operational		23/02/2000	910m	South

Tanks (Points)

What are the Tank Points located within the dataset buffer?
Note. The large majority of tank features provided by LPI are derived from aerial imagery & are therefore primarily above ground tanks.

Map Id	Tank Type	Status	Name	Feature Currency	Distance	Direction
	No records in buffer					

Major Easements

What Major Easements exist within the dataset buffer?
Note. Easements provided by LPI are not at the detail of local governments. They are limited to major easements such as Right of Carriageway, Electrical Lines (66kVa etc.), Easement to drain water & Significant subterranean pipelines (gas, water etc.).

Map Id	Easement Class	Easement Type	Easement Width	Distance	Direction
154835862	Primary	Right of way	10m	126m	South West
120109435	Primary	Undefined		222m	West
120108862	Primary	Undefined		411m	South West
178438848	Primary	Electricity	40m	438m	North
165184695	Primary	Electricity	70 wide	464m	North West
120107080	Primary	Undefined		636m	South West

Topographic Features

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

State Forest

What State Forest exist within the dataset buffer?

State Forest Number	State Forest Name	Distance	Direction
N/A	No records in buffer		

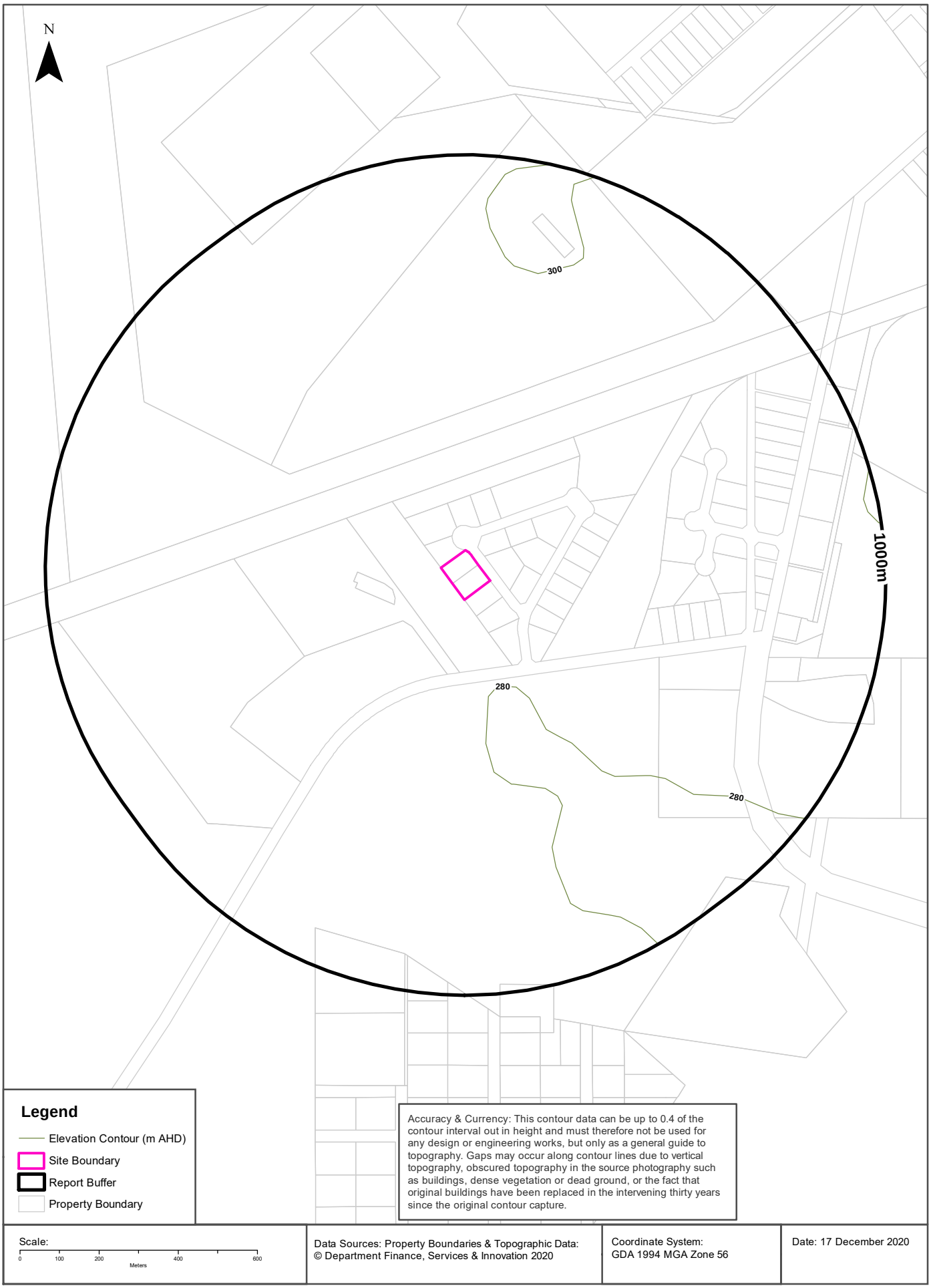
National Parks and Wildlife Service Reserves

What NPWS Reserves exist within the dataset buffer?

Reserve Number	Reserve Type	Reserve Name	Gazetted Date	Distance	Direction
N/A	No records in buffer				

Elevation Contours (m AHD)

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Hydrogeology & Groundwater

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Hydrogeology

Description of aquifers on-site:

Description
Local aquifers, of generally low productivity

Description of aquifers within the dataset buffer:

Description
Local aquifers, of generally low productivity

Hydrogeology Map of Australia : Commonwealth of Australia (Geoscience Australia)

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018

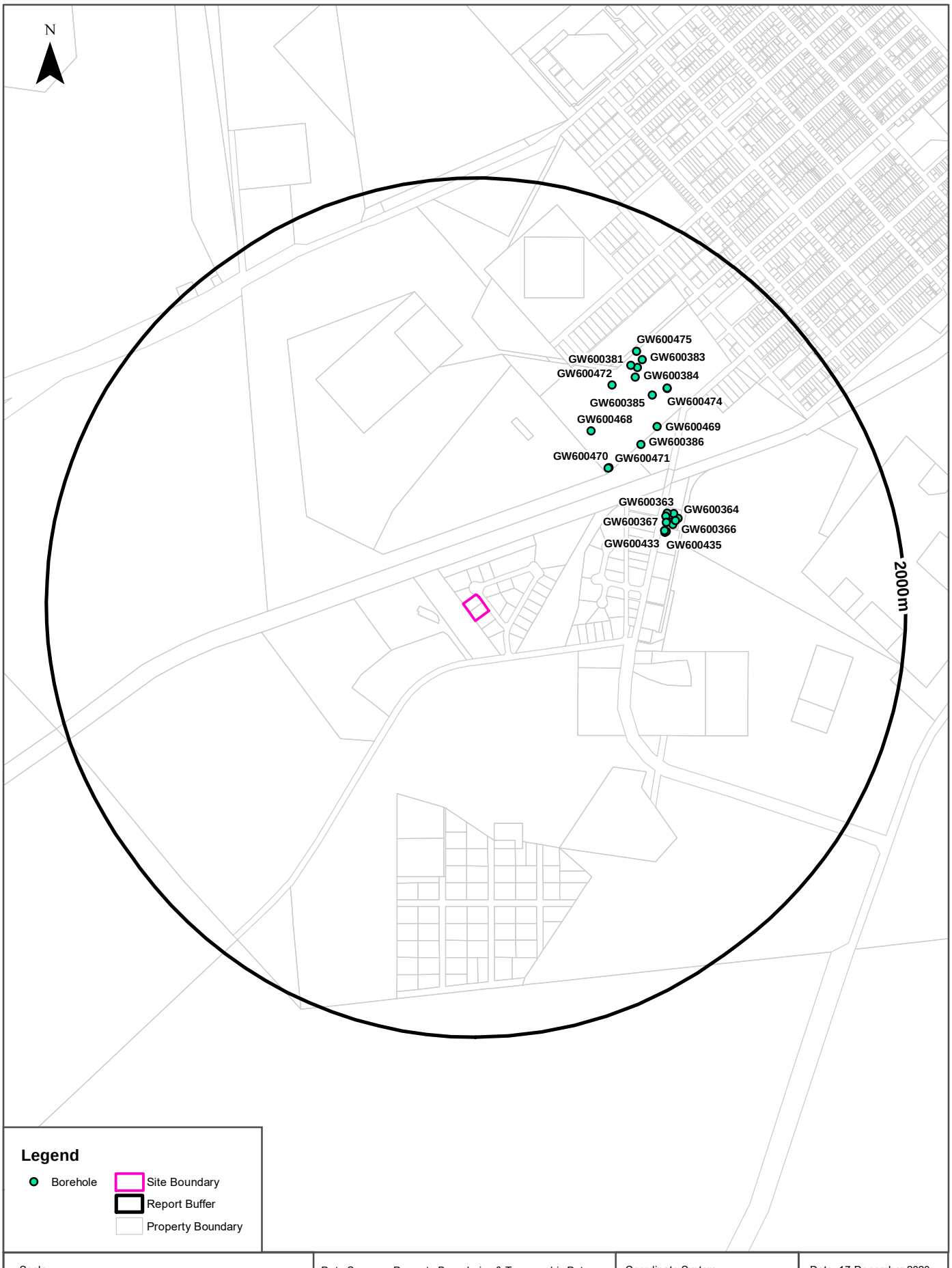
Temporary water restrictions relating to the Botany Sands aquifer within the dataset buffer:

Prohibition Area No.	Prohibition	Distance	Direction
N/A	No records in buffer		

Temporary Water Restriction (Botany Sands Groundwater Source) Order 2018 Data Source : NSW Department of Primary Industries

Groundwater Boreholes

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Hydrogeology & Groundwater

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Groundwater Boreholes

Boreholes within the dataset buffer:

GW No.	Licence No	Work Type	Owner Type	Authorised Purpose	Intended Purpose	Name	Complete Date	Final Depth (m)	Drilled Depth (m)	Salinity (mg/L)	SWL (m bgl)	Yield (L/s)	Elev (AHD)	Dist	Dir
GW600470	60BL216688	Bore	Local Govt	Monitoring Bore	Monitoring Bore		17/10/2013	36.00	40.00		0.90			877m	North East
GW600471	60BL216688	Bore	Local Govt	Monitoring Bore	Monitoring Bore		17/10/2013	5.00	5.20		1.20	0.100		880m	North East
GW600433	60BL216439	Bore	Private	Monitoring Bore	Monitoring Bore		05/06/2012	17.00	17.00				282.37	925m	East
GW600434	60BL216439	Bore	Private	Monitoring Bore	Aquaculture, Monitoring Bore		06/06/2012	17.70	17.70				28.33	928m	East
GW600435	60BL216439	Bore	Private	Monitoring Bore	Monitoring Bore		06/06/2012	20.00					281.90	933m	East
GW600367	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		23/04/2010	20.00	20.00					951m	North East
GW600468	60BL216688	Bore	Local Govt	Monitoring Bore	Monitoring Bore		15/08/2013	2.00	2.00					960m	North East
GW600362	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		02/07/2008	17.00	17.00		13.00			963m	North East
GW600366	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		23/04/2010	16.00	16.00					975m	North East
GW600368	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		23/04/2010	20.00	20.00		15.86			975m	North East
GW600360	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		01/07/2008	19.00	19.00		13.10			979m	North East
GW600361	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		02/07/2008	26.00	26.00		20.50			986m	North East
GW600365	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		23/04/2010	25.00	25.00					995m	North East
GW600363	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		03/07/2008	19.00	19.00		13.60			1002m	North East
GW600364	60BL216531	Bore	Private	Monitoring Bore	Monitoring Bore		04/07/2008	22.00	22.00		21.70			1010m	North East
GW600386		Bore	Other Govt		Monitoring Bore		29/05/2012	6.00	6.00					1068m	North East
GW600469	60BL216688	Bore	Local Govt	Monitoring Bore	Monitoring Bore		16/10/2013	6.00	6.00		2.20			1184m	North East
GW600472	60BL216688	Bore	Local Govt	Monitoring Bore	Monitoring Bore		13/08/2013	15.00	15.00		6.35	0.250		1198m	North East
GW600385		Bore	Other Govt		Monitoring Bore		29/05/2012	6.00	6.00					1277m	North East
GW600384		Bore	Other Govt		Monitoring Bore		29/05/2012	6.00	6.00					1294m	North East
GW600381		Bore	Other Govt		Monitoring Bore		29/05/2012	6.00	6.00					1327m	North East
GW600382		Bore	Other Govt		Monitoring Bore		29/05/2012	6.00	6.00					1337m	North East
GW600474	60BL216688	Bore	Local Govt	Monitoring Bore	Monitoring Bore		14/08/2013	4.00	4.40		2.90	0.100		1348m	North East
GW600473	60BL216688	Bore	Local Govt	Monitoring Bore	Monitoring Bore		15/08/2013	40.00	40.00		2.60	1.500		1350m	North East
GW600383	60BL216594	Bore	Other Govt		Monitoring Bore		24/10/2012	6.00	4.20					1381m	North East
GW600475	60BL216688	Bore	Local Govt	Monitoring Bore	Monitoring Bore		13/08/2013	11.00	11.00		7.30	1.500		1399m	North East

Hydrogeology & Groundwater

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Driller's Logs

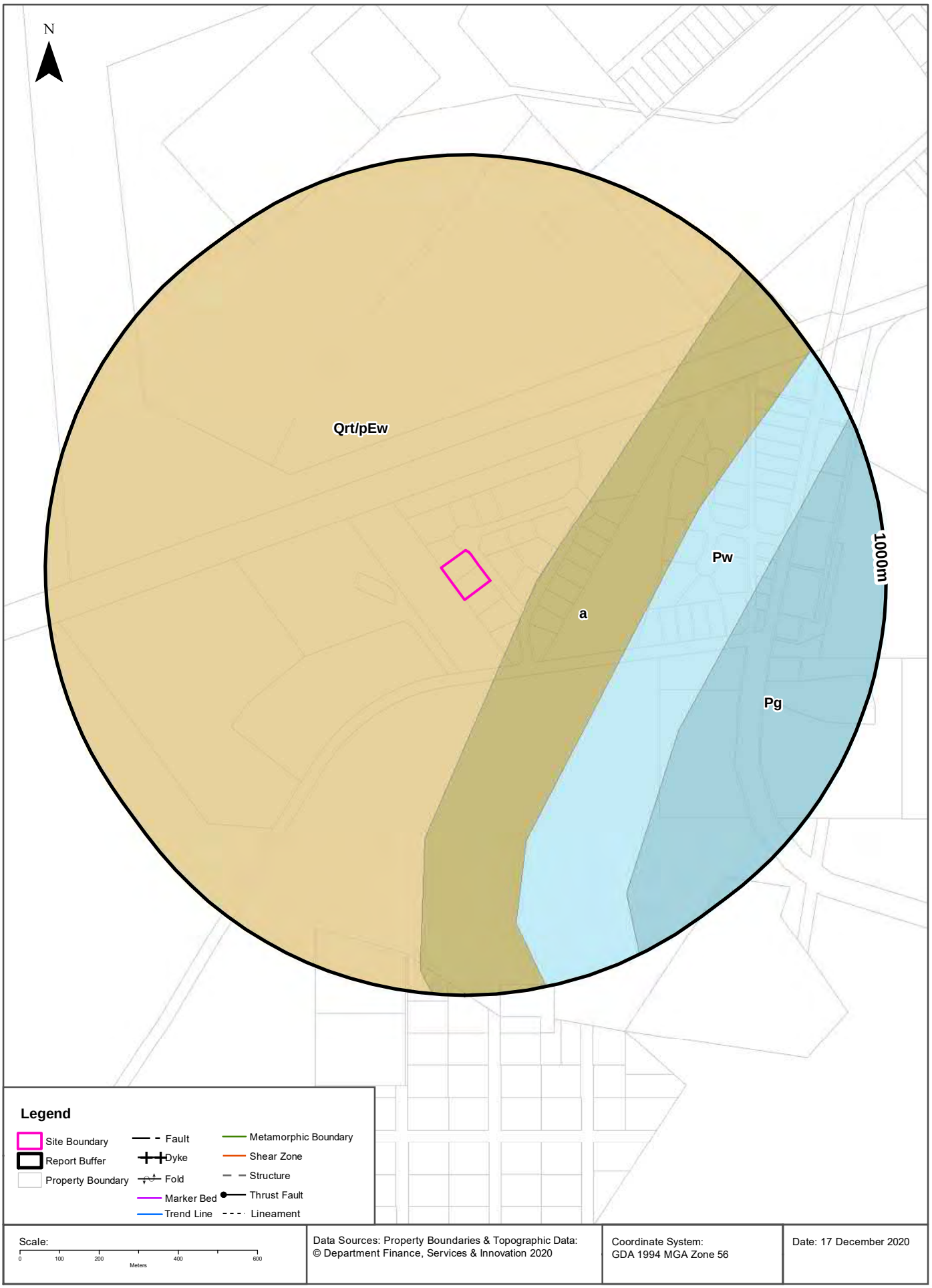
Drill log data relevant to the boreholes within the dataset buffer:

Groundwater No	Drillers Log	Distance	Direction
GW600470	0.00m-1.00m Red Brown Silty Sand Clay 1.00m-3.60m Weathered feldspathic Gneiss 3.60m-7.20m Grey hard feldspar quartz 7.20m-40.00m Quartz rock	877m	North East
GW600471	0.00m-1.00m Red Brown Silty Sandy Clay 1.00m-5.20m Feldspar Quartz	880m	North East
GW600367	0.00m-0.10m fill 0.10m-1.50m sand, gravelly, brown/grey, fine grained sand, dry 1.50m-20.00m bedrock, light grey to dark grey, dry	951m	North East
GW600468	0.00m-1.80m Silty Sandy Red Brown Clay 1.80m-2.00m Feldspar Quartz	960m	North East
GW600362	0.00m-0.40m fill, sandy gravell, orange, fine to medium grained sand, subangular gravels 0.40m-0.75m sand, gravelly clayey, orange and grey, medium grained sand, angular gravels, dry 0.75m-3.15m bedrock, light grey with finer grained rock interbed, mostly granite gneiss 3.15m-15.00m bedrock, light grey with finer grained rock interbed, mostly granite gneiss 15.00m-17.00m silt, clayey sandy, black and grey, low plasticity, fine grained sand, subangular, soft mafic rock, moist'	963m	North East
GW600366	0.00m-0.10m fill, silty, sand, gravelly, rounded and angular gravels, dry 0.10m-0.80m sand, gravelly, clayey, low plasticity, grey, fine grained sand, dry 0.80m-16.00m bedrock, light grey	975m	North East
GW600368	0.00m-0.10m fill, sandy, gravelly 0.10m-1.50m sand, gravelly, clayey, low plasticity, brown/orange, fine grained sand, dry 1.50m-20.00m bedrock, light grey	975m	North East
GW600360	0.00m-0.10m fill, sandy gravelly, light orange, medium grained sand, angular gravels 0.10m-0.50m silty sand, red and orange, fine grained sand, angular, very small amount of fines, well sorted grains, dry 0.50m-1.50m sand, gravelly silty, orange and grey, medium grained sand, angular gravels 1.50m-13.50m bedrock, grey, ground meta sediments, consolidated, wet patch at 10m 13.50m-14.10m silt,clayey sandy, black and grey, low plasticity, fine grained sand, moist 14.10m-16.20m bedrock, grey, ground meta sidements, consolidated, has a soft meta sediment interbed, dry 16.20m-17.00m silt, clayey sand, black and grey, low plasticity, fine grained sand, moist 17.00m-19.00m bedrock, grey, ground meta sediments, consolidated, has a soft meta sediment interbed, dry	979m	North East
GW600361	0.00m-0.10m fill, sandy gravell, orange, medium grained sand, angular gravels, dry 0.10m-2.20m sand, gravelly clayey silty, orange and grey, medium grained sand, dry 2.20m-12.00m bedrock, light grey with intermittent darker bands 12.00m-12.50m silt, clayey sandy, black and grey, low plasticity, fine grained sand, subangular, moist 12.50m-26.00m bedrock, light grey with intermittent darker bands	986m	North East
GW600365	0.00m-0.10m fill, silty, sandy, gravelly, orange, fine grained sand, dry 0.10m-2.00m sand, gravelly, clayey, grey, fine grained sand, dry 2.00m-25.00m bedrock, light to dark grey	995m	North East
GW600363	0.00m-0.40m silty sand, orange, fine to medium grained sand, subangular gravels, dry 0.40m-1.00m sand, gravelly clayey, orange and grey, medium grained sand, angular gravels, dry 1.00m-6.75m bedrock, grey to light grey with interbedded soft layers, dry 6.75m-7.60m silt, clayey sandy, black grey mottled olive, low plasticity, fine grained sand, angular, sm amount of mica, dry-moist 7.60m-9.00m bedrock, grey to light grey with interbedded soft layers, dry 9.00m-10.50m silt, clayey sandy, black grey mottled olive, low plasticity, fine grained sand, angular, dry to moist 10.50m-16.50m bedrock, grey to light grey with interbedded soft layers, dry 16.50m-16.75m silt, clayey sandy, black grey mottled olive, low plasticity, fine grained sand, angular, dry to moist 16.75m-19.00m bedrock, grey to light grey with interbedded soft layers, dry	1002m	North East
GW600364	0.00m-0.10m fill, silty sandy gravelly, orange, fine grained sand, subangular, dry 0.10m-2.00m sand, gravelly clayey, orange and grey, medium grained sand, angular gravels, dry 2.00m-4.80m silt, sandy clayey, black and grey , low plasticity, fine grained sand, angular, dry to moist 4.80m-22.00m Bedrock, light grey to dark grey with softer interbeds, mica rich, very dark band from 2-4m, dry	1010m	North East

Groundwater No	Drillers Log	Distance	Direction
GW600386	0.00m-6.00m Fill Silty Sand, Clay with Gravel, slightly moist, yellow	1068m	North East
GW600469	0.00m-2.00m Red Brown Silty Sandy Clay 2.00m-6.00m Feldspar Quartz	1184m	North East
GW600472	0.00m-0.90m Light Brown Silty Sand 0.90m-15.00m Feldspar Quartz	1198m	North East
GW600385	0.00m-0.10m Top Soil 0.10m-6.00m Fill, Silty Clay, Gravels with some Clay, moist, friable	1277m	North East
GW600384	0.00m-1.00m Fill, Silty Clay, Gravels, Yellow, Dry, Loose 1.00m-3.00m Silty Clay, Red, Moist, high plasticity, no odour 3.00m-6.00m Silty Clay Brown	1294m	North East
GW600381	0.00m-0.90m Fill, Silty Clay, Gravels, Yellow, Dry loose 0.90m-6.00m Silty Clay, Red Reddy Brown, Moist, high plasticity, no obvious odour	1327m	North East
GW600382	0.00m-0.40m Fill, Silty Clay, Gravels, Yellow, Dry, Loose 0.40m-4.40m Silty Clay Red Reddy Brown, moist, high plasticity, no obvious odour 4.40m-4.50m Cemented layer 4.50m-6.00m Silt, Sand, Pyrite, friable, Brownish Yellow	1337m	North East
GW600474	0.00m-0.40m Red Brown Silty Sandy Clay 0.40m-4.40m Feldspar Quartz	1348m	North East
GW600473	0.00m-0.20m Red Brown Silty Sandy Clay 0.20m-40.00m Feldspar Quartz	1350m	North East
GW600383	0.00m-3.50m Fill, Silty Clay, Gravels, Yellow, Dry, Loose 3.50m-4.20m Silty Clay, Red Reddy Brown, moist, high plasticity, no obvious odour	1381m	North East
GW600475	0.00m-1.20m Light Brown Silty Sand 1.20m-11.00m Feldspar Quartz	1399m	North East

Geology 1:250,000

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Geology

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Geological Units

What are the Geological Units onsite?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
Qrt/pEw	Willyama Complex largely obscured by Qrt				Precambrian			1:250,000

What are the Geological Units within the dataset buffer?

Symbol	Description	Unit Name	Group	Sub Group	Age	Dom Lith	Map Sheet	Dataset
a	Amphibolite				Precambrian			1:250,000
Pg	Granite gneiss				Precambrian			1:250,000
Pw	Sillimanite gneiss, andalusite-, chiastolite-, mica-, schist, phyylite, quartzite, sandstone, slate				Precambrian			1:250,000
Qrt/pEw	Willyama Complex largely obscured by Qrt				Precambrian			1:250,000

Geological Structures

What are the Geological Structures onsite?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

What are the Geological Structures within the dataset buffer?

Feature	Name	Description	Map Sheet	Dataset
No features				1:250,000

Geological Data Source : NSW Department of Industry, Resources & Energy

Naturally Occurring Asbestos Potential

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Naturally Occurring Asbestos Potential

Naturally Occurring Asbestos Potential within the dataset buffer:

Potential	Sym	Strat Name	Group	Formation	Scale	Min Age	Max Age	Rock Type	Dom Lith	Description	Dist	Dir
No records in buffer												

Atlas of Australian Soils

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Soils

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance
F5	Tenosol	Hilly with small valley plains: shallow dense loamy soils (Um5.41); shallow calcareous loamy soils (Um5.11); and shallow loams (Um1.43) and sands (Uc1.43) occur on the hills. Associated are crusty loamy soils (Dr1.13) and (Dr1.33) and highly calcareous loamy earths (Gc1.12) on pediments, slopes, and in the small valleys. This description is expanded slightly from that given in Sheet 1.	0m

Acid Sulfate Soils

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Environmental Planning Instrument - Acid Sulfate Soils

What is the on-site Acid Sulfate Soil Plan Class that presents the largest environmental risk?

Soil Class	Description	EPI Name
N/A		

If the on-site Soil Class is 5, what other soil classes exist within 500m?

Soil Class	Description	EPI Name	Distance	Direction
N/A				

Atlas of Australian Acid Sulfate Soils

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Acid Sulfate Soils

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	0m

Dryland Salinity

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Dryland Salinity - National Assessment

Is there Dryland Salinity - National Assessment data onsite?

No

Is there Dryland Salinity - National Assessment data within the dataset buffer?

No

What Dryland Salinity assessments are given?

Assessment 2000	Assessment 2020	Assessment 2050	Distance	Direction
N/A	N/A	N/A	N/A	N/A

Dryland Salinity Data Source : National Land and Water Resources Audit
The Commonwealth and all suppliers of source data used to derive the maps of "Australia, Forecast Areas Containing Land of High Hazard or Risk of Dryland Salinity from 2000 to 2050" do not warrant the accuracy or completeness of information in this product. Any person using or relying upon such information does so on the basis that the Commonwealth and data suppliers shall bear no responsibility or liability whatsoever for any errors, faults, defects or omissions in the information. Any persons using this information do so at their own risk.
In many cases where a high risk is indicated, less than 100% of the area will have a high hazard or risk.

Dryland Salinity Potential of Western Sydney

Dryland Salinity Potential of Western Sydney within the dataset buffer?

Feature Id	Classification	Description	Distance	Direction
N/A	Outside Data Coverage			

Dryland Salinity Potential of Western Sydney Data Source : NSW Office of Environment and Heritage

Mining

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

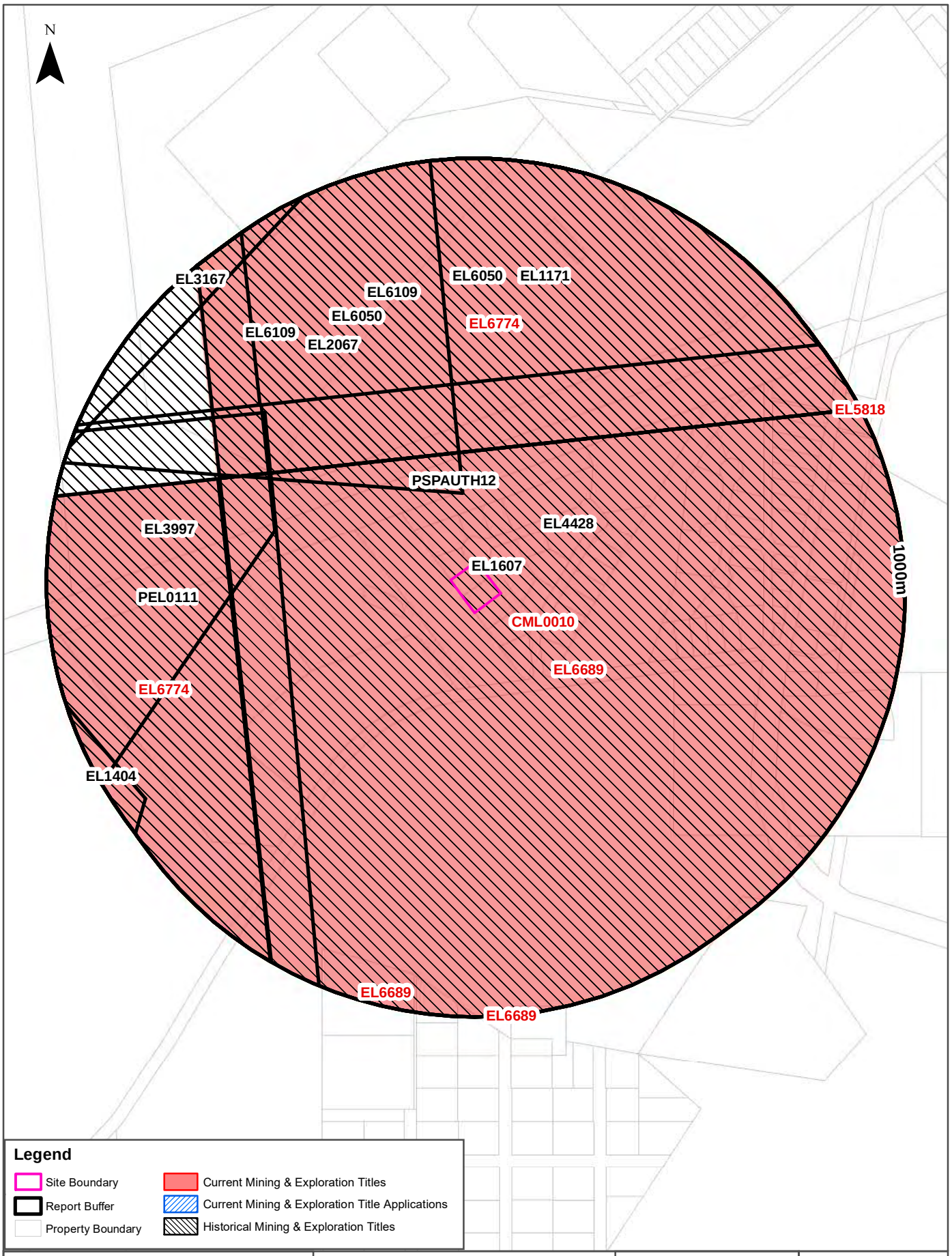
Mining Subsidence Districts

Mining Subsidence Districts within the dataset buffer:

District	Distance	Direction
There are no Mining Subsidence Districts within the report buffer		

Mining & Exploration Titles

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Mining

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Current Mining & Exploration Titles

Current Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Grant Date	Expiry Date	Last Renewed	Operation	Resource	Minerals	Dist (m)	Dir'
CML0010	PERILYA BROKEN HILL LIMITED	02/07/87	04/09/24	23 Dec 2008	MINING	MINERALS	Antimony, Apatite, Arsenic, Beryllium And Its Ores, Bismuth, Cadmium, Cobalt, Copper, Felspar, Fluorspar, Gold, Lead, Limestone, Manganese, Molybdeni	0m	Onsite
EL6689	PERILYA BROKEN HILL LIMITED	02/01/07	02/01/23	17 Apr 2018	EXPLORING	MINERALS	Group 1	0m	Onsite
EL6774	PERILYA BROKEN HILL LIMITED	08/05/07	31/10/18	Renewal Sought	EXPLORING	MINERALS	Group 1	274m	North West
EL5818	BROKEN HILL OPERATIONS PTY LTD	08/03/01	08/03/23	23 Jun 2017	EXPLORING	MINERALS	Group 1	999m	North East

Current Mining & Exploration Title Applications

Current Mining & Exploration Title Applications within the dataset buffer:

Application Ref	Applicant	Application Date	Operation	Resource	Minerals	Dist (m)	Dir'
N/A	No Records in Buffer						

Mining

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Historical Mining & Exploration Titles

Historical Mining & Exploration Titles within the dataset buffer:

Title Ref	Holder	Start Date	End Date	Resource	Minerals	Dist (m)	Dir'
EL1607	NORTH BROKEN HILL LIMITED	01 Apr 1981	01 Nov 1981	MINERALS	Sillimanite	0m	Onsite
EL4428	PASMINCO AUSTRALIA LIMITED	01 Oct 1992	01 Oct 1994	MINERALS	Pb Zn	0m	Onsite
PSPAUTH12	HARDIE INFRASTRUCTURE PTY LTD	4/10/2006	22/07/2008	PETROLEUM	Petroleum	0m	Onsite
EL2067	CRA EXPLORATION PTY LIMITED	01 Aug 1983	01 Feb 1985	MINERALS	Pb Zn Cu Au	173m	North West
EL6050	GOLDEN CROSS OPERATIONS PTY. LTD.			MINERALS		274m	North
EL6050	GOLDEN CROSS OPERATIONS PTY. LTD.	10 Feb 2003	11 Aug 2003	MINERALS	Au Cu Pb	274m	North
EL6109	GOLDEN CROSS OPERATIONS PTY. LTD.			MINERALS		274m	North West
EL6109	GOLDEN CROSS OPERATIONS PTY. LTD.	11 Aug 2003	25 Sep 2006	MINERALS	Zn	274m	North West
EL1171	ZINC CORPORATION LIMITED	31 Jan 1979	30 Jan 1983	MINERALS	Pb Zn	443m	North
EL3997	ABERFOYLE RESOURCES LIMITED	01 Aug 1991	01 Aug 1993	MINERALS	Cu Pb Zn Ag	451m	West
PEL0111				PETROLEUM	Petroleum	541m	West
EL3167	CRA EXPLORATION PTY LIMITED	01 Aug 1988	01 Aug 1989	MINERALS	Pb Zn	915m	North West
EL1404	ANACONDA AUSTRALIA INC	01 Aug 1980	01 Aug 1981	MINERALS	Pb Zn Cu	928m	South West

State Environmental Planning Policy

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

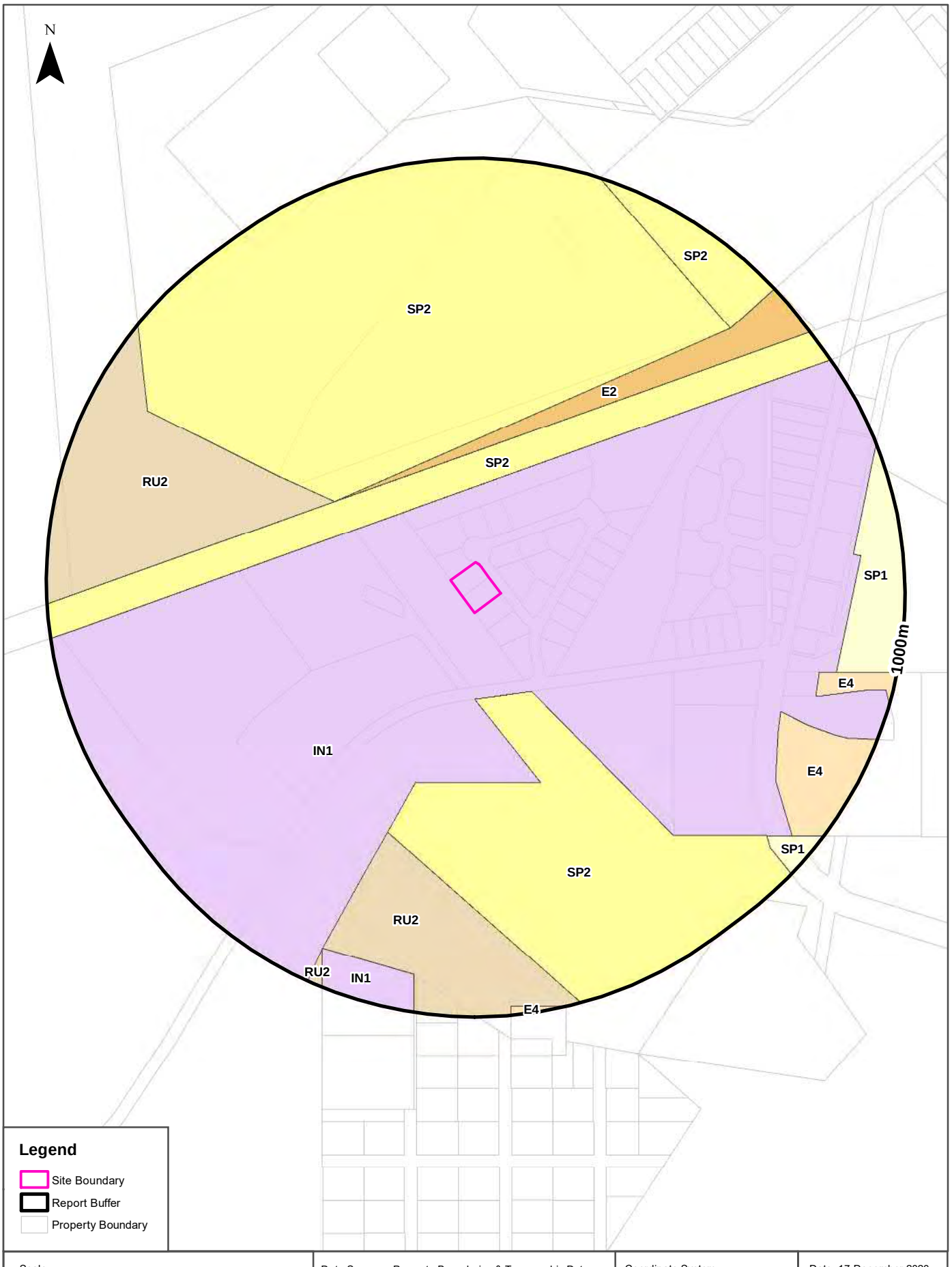
State Significant Precincts

What SEPP State Significant Precincts exist within the dataset buffer?

Map Id	Precinct	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
N/A	No Records in Buffer							

EPI Planning Zones

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Environmental Planning Instrument

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

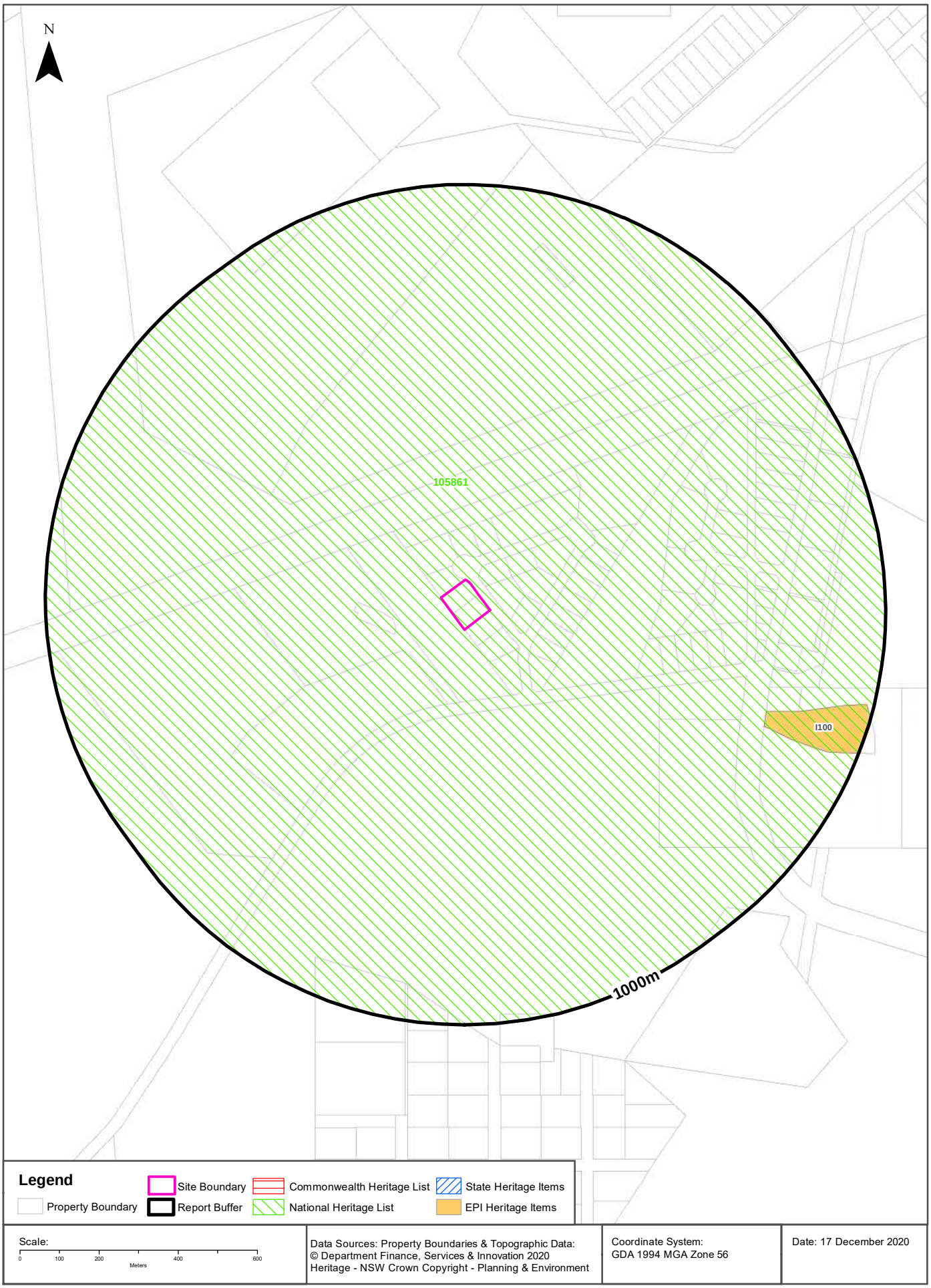
Land Zoning

What EPI Land Zones exist within the dataset buffer?

Zone	Description	Purpose	EPI Name	Published Date	Commenced Date	Currency Date	Amendment	Distance	Direction
IN1	General Industrial		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		0m	Onsite
SP2	Infrastructure	Rail Infrastructure Facility	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		177m	North East
SP2	Infrastructure	Water Supply System	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		211m	South East
E2	Environmental Conservation		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		259m	North East
SP2	Infrastructure	Waste or Resource Management Facility	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		278m	North
RU2	Rural Landscape		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		348m	North West
RU2	Rural Landscape		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		583m	South East
E4	Environmental Living		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		750m	South East
SP1	Special Activities	Mining	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		851m	North East
SP2	Infrastructure	Sewerage System	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		852m	North East
IN1	General Industrial		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		901m	South
E4	Environmental Living		Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	19/12/2014		977m	South

Heritage Items

70 and 80 Pinnacles Place, Broken Hill, NSW 2880



Heritage

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
105861	City of Broken Hill	Silver City Hwy, Broken Hill NSW	1/04/370/0044	Historic	Minister considering decision within extended period		0m	Onsite

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

State Heritage Register - Curtilages

What are the State Heritage Register Items located within the dataset buffer?

Map Id	Name	Address	LGA	Listing Date	Listing No	Plan No	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: NSW Crown Copyright - Office of Environment & Heritage

Environmental Planning Instrument - Heritage

What are the EPI Heritage Items located within the dataset buffer?

Map Id	Name	Classification	Significance	EPI Name	Published Date	Commenced Date	Currency Date	Distance	Direction
I100	Old Broken Hill City Abattoir	Item - General	Local	Broken Hill Local Environmental Plan 2013	30/08/2013	30/08/2013	30/08/2013	741m	East

Heritage Data Source: NSW Crown Copyright - Planning & Environment

Natural Hazards - Bush Fire Prone Land

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Data Sources: Bush Fire Prone Land: © NSW Rural Fire Service 2020. Property Boundaries: © Department Finance, Services & Innovation 2020

Coordinate System: GDA 1994 MGA Zone 56

Date: 17 December 2020

Natural Hazards

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Bush Fire Prone Land

What are the nearest Bush Fire Prone Land Categories that exist within the dataset buffer?

Bush Fire Prone Land Category	Distance	Direction
Vegetation Buffer	0m	Onsite
Vegetation Category 3	26m	North

Ecological Constraints

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Ramsar Wetlands

What Ramsar Wetland areas exist within the dataset buffer?

Map Id	Ramsar Name	Wetland Name	Designation Date	Source	Distance	Direction
N/A	No records in buffer					

Ramsar Wetlands Data Source: © Commonwealth of Australia - Department of Environment

Ecological Constraints

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Groundwater Dependent Ecosystems Atlas

Type	GDE Potential	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
N/A	No records within buffer				

Ecological Constraints

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

Inflow Dependent Ecosystems Likelihood

Type	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Distance
N/A	No records within buffer				

Ecological Constraints

70 and 80 Pinnacles Place, Broken Hill, NSW 2880

NSW BioNet Atlas

Species on the NSW BioNet Atlas that have a NSW or federal conservation status, a NSW sensitivity status, or are listed under a migratory species agreement, and are within 10km of the site?

Kingdom	Class	Scientific	Common	NSW Conservation Status	NSW Sensitivity Class	Federal Conservation Status	Migratory Species Agreements
Animalia	Aves	Actitis hypoleucos	Common Sandpiper	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Arenaria interpres	Ruddy Turnstone	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Aves	Artamus cyanopterus cyanopterus	Dusky Woodswallow	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Burhinus grallarius	Bush Stone-curlew	Endangered	Not Sensitive	Not Listed	
Animalia	Aves	Calamanthus campestris	Rufous Fieldwren	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Circus assimilis	Spotted Harrier	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Climacteris picumnus victoriae	Brown Treecreeper (eastern subspecies)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Epthianura albifrons	White-fronted Chat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Hamirostra melanosternon	Black-breasted Buzzard	Vulnerable	Category 3	Not Listed	
Animalia	Aves	Hieraaetus morphnoides	Little Eagle	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Lophochroa leadbeateri	Major Mitchell's Cockatoo	Vulnerable	Category 2	Not Listed	
Animalia	Aves	Melanodryas cucullata cucullata	Hooded Robin (south-eastern form)	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Oxyura australis	Blue-billed Duck	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Pezoporus occidentalis	Night Parrot	Presumed Extinct	Not Sensitive	Endangered	
Animalia	Aves	Pyrrholaemus brunneus	Redthroat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Aves	Rostratula australis	Australian Painted Snipe	Endangered	Not Sensitive	Endangered	
Animalia	Aves	Tringa nebularia	Common Greenshank	Not Listed	Not Sensitive	Not Listed	ROKAMBA;CAMBA; JAMBA
Animalia	Mammalia	Chalinolobus picatus	Little Pied Bat	Vulnerable	Not Sensitive	Not Listed	
Animalia	Mammalia	Leporillus conditor	Greater Stick-nest Rat	Presumed Extinct	Not Sensitive	Vulnerable	
Animalia	Mammalia	Notomys fuscus	Dusky Hopping-mouse	Endangered	Not Sensitive	Vulnerable	
Animalia	Reptilia	Pseudonaja modesta	Ringed Brown Snake	Endangered	Not Sensitive	Not Listed	
Animalia	Reptilia	Tiliqua occipitalis	Western Blue-tongued Lizard	Vulnerable	Not Sensitive	Not Listed	
Plantae	Flora	Acacia carneorum	Purple-wood Wattle	Vulnerable	Not Sensitive	Vulnerable	
Plantae	Flora	Acacia notabilis	Mallee Golden Wattle	Endangered	Not Sensitive	Not Listed	
Plantae	Flora	Acacia rivalis	Creek Wattle	Endangered	Not Sensitive	Not Listed	

Data does not include NSW category 1 sensitive species.

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Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

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Australian Government

Department of Agriculture, Water and the Environment

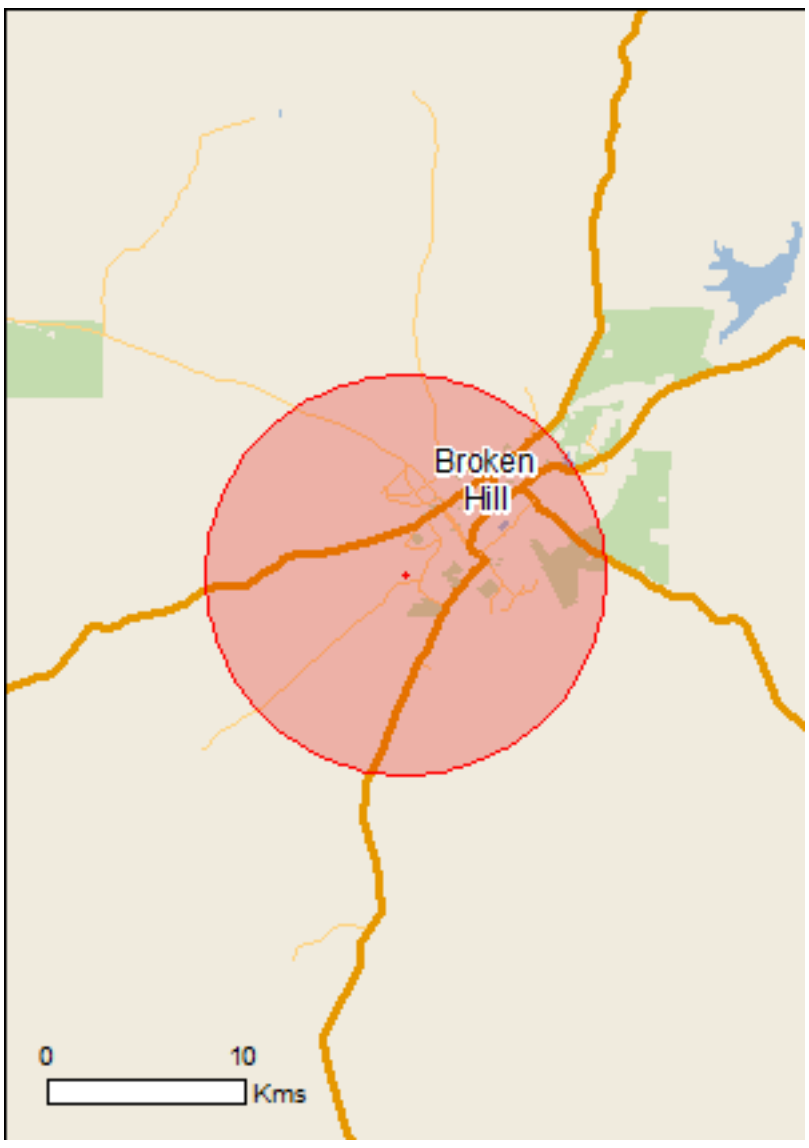
EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

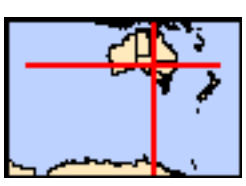
Information is available about Environment Assessments and the EPBC Act including significance guidelines, forms and application process details.

Report created: 19/01/21 11:38:54



Coordinates

Buffer: 10.0Km



Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance.

World Heritage Properties:	None
National Heritage Places:	1
Wetlands of International Importance:	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Area:	None
Listed Threatened Ecological Communities:	None
Listed Threatened Species:	12
Listed Migratory Species:	8

Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at http://www.environment.gov.au/heritage

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

Commonwealth Land:	9
Commonwealth Heritage Places:	1
Listed Marine Species:	13
Whales and Other Cetaceans:	None
Critical Habitats:	None
Commonwealth Reserves Terrestrial:	None
Australian Marine Parks:	None

Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	22
Nationally Important Wetlands:	None
Key Ecological Features (Marine)	None

Details

Matters of National Environmental Significance

National Heritage Properties		[Resource Information]
Name	State	Status
Historic		
City of Broken Hill	NSW	Listed place

Listed Threatened Species		[Resource Information]
Name	Status	Type of Presence
Birds		
Amytornis modestus		
Thick-billed Grasswren [84121]	Vulnerable	Species or species habitat likely to occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Falco hypoleucos		
Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area
Grantiella picta		
Painted Honeyeater [470]	Vulnerable	Species or species habitat may occur within area
Pedionomus torquatus		
Plains-wanderer [906]	Critically Endangered	Species or species habitat may occur within area
Pezoporus occidentalis		
Night Parrot [59350]	Endangered	Extinct within area
Rostratula australis		
Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
Fish		
Maccullochella peelii		
Murray Cod [66633]	Vulnerable	Species or species habitat known to occur within area
Mammals		
Notomys fuscus		
Dusky Hopping-mouse, Wilkiniti [125]	Vulnerable	Species or species habitat known to occur within area
Nyctophilus corbeni		
Corben's Long-eared Bat, South-eastern Long-eared Bat [83395]	Vulnerable	Species or species habitat may occur within area
Plants		
Acacia carneorum		
Needle Wattle, Dead Finish, Purple-wood Wattle [66685]	Vulnerable	Species or species habitat known to occur within area

Name	Status	Type of Presence
Solanum karsense		
Menindee Nightshade [7776]	Vulnerable	Species or species habitat may occur within area

Listed Migratory Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
Migratory Marine Birds		
Apus pacificus		
Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Migratory Terrestrial Species		
Motacilla cinerea		
Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava		
Yellow Wagtail [644]		Species or species habitat may occur within area
Migratory Wetlands Species		
Actitis hypoleucos		
Common Sandpiper [59309]		Species or species habitat may occur within area
Calidris acuminata		
Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea		
Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos		
Pectoral Sandpiper [858]		Species or species habitat may occur within area
Gallinago hardwickii		
Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Commonwealth Land [Resource Information]

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land -
Commonwealth Land - Airservices Australia
Commonwealth Land - Australian Broadcasting Commission
Commonwealth Land - Australian Postal Commission
Commonwealth Land - Australian Telecommunications Commission
Commonwealth Land - Defence Housing Authority
Commonwealth Land - Director of War Service Homes
Commonwealth Land - Telstra Corporation Limited
Defence - BROKEN HILL TRAINING DEPOT

Commonwealth Heritage Places [Resource Information]

Name	State	Status
Historic		
Broken Hill Post Office	NSW	Listed place

Listed Marine Species [Resource Information]

* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence

Name	Threatened	Type of Presence
Birds		
Actitis hypoleucos Common Sandpiper [59309]		Species or species habitat may occur within area
Apus pacificus Fork-tailed Swift [678]		Species or species habitat likely to occur within area
Ardea alba Great Egret, White Egret [59541]		Species or species habitat likely to occur within area
Ardea ibis Cattle Egret [59542]		Species or species habitat may occur within area
Calidris acuminata Sharp-tailed Sandpiper [874]		Species or species habitat may occur within area
Calidris ferruginea Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
Calidris melanotos Pectoral Sandpiper [858]		Species or species habitat may occur within area
Chrysococcyx osculans Black-eared Cuckoo [705]		Species or species habitat known to occur within area
Gallinago hardwickii Latham's Snipe, Japanese Snipe [863]		Species or species habitat may occur within area
Merops ornatus Rainbow Bee-eater [670]		Species or species habitat may occur within area
Motacilla cinerea Grey Wagtail [642]		Species or species habitat may occur within area
Motacilla flava Yellow Wagtail [644]		Species or species habitat may occur within area
Rostratula benghalensis (sensu lato) Painted Snipe [889]	Endangered*	Species or species habitat may occur within area

Extra Information

Invasive Species [Resource Information]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resouces Audit, 2001.

Name	Status	Type of Presence
Birds		
Anas platyrhynchos Mallard [974]		Species or species habitat likely to occur within area
Carduelis carduelis European Goldfinch [403]		Species or species habitat likely to occur within area
Columba livia Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
Passer domesticus House Sparrow [405]		Species or species habitat likely to occur within area
Sturnus vulgaris Common Starling [389]		Species or species habitat likely to occur within area
Turdus merula Common Blackbird, Eurasian Blackbird [596]		Species or species habitat likely to occur within area
Mammals		
Bos taurus Domestic Cattle [16]		Species or species habitat likely to occur within area
Canis lupus familiaris Domestic Dog [82654]		Species or species habitat likely to occur within area
Capra hircus Goat [2]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Sus scrofa Pig [6]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
Plants		

Name	Status	Type of Presence
Carrichtera annua Ward's Weed [9511]		Species or species habitat may occur within area
Chrysanthemoides monilifera subsp. monilifera Boneseed [16905]		Species or species habitat likely to occur within area
Cylindropuntia spp. Prickly Pears [85131]		Species or species habitat likely to occur within area
Lycium ferocissimum African Boxthorn, Boxthorn [19235]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
Tamarix aphylla Athel Pine, Athel Tree, Tamarisk, Athel Tamarisk, Athel Tamarix, Desert Tamarisk, Flowering Cypress, Salt Cedar [16018]		Species or species habitat likely to occur within area

Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

Coordinates

-31.986118 141.422343,-31.985759 141.423116,-31.986541 141.42369,-31.986928 141.422885,-31.986118 141.422338,-31.986118 141.422343

Acknowledgements

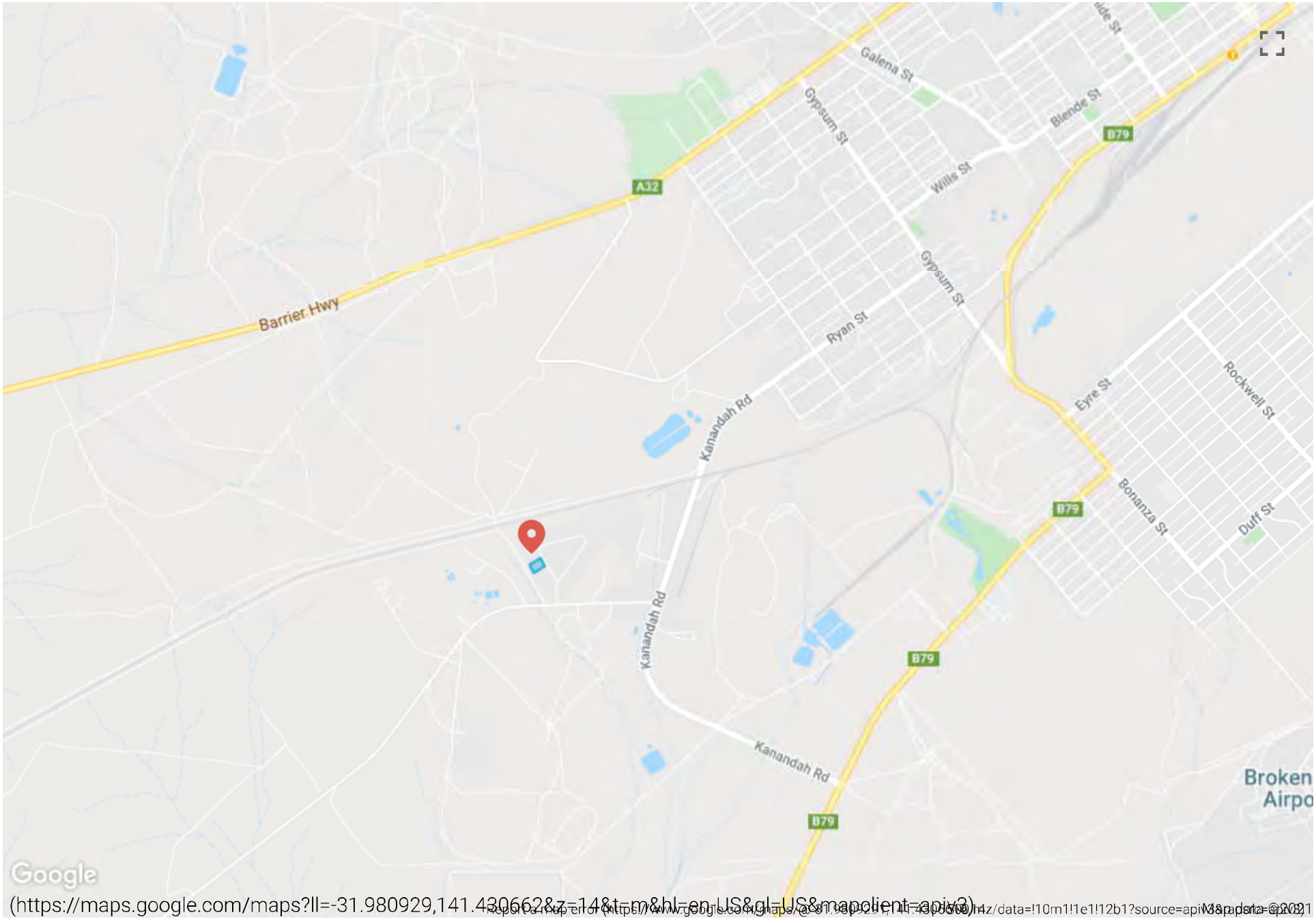
This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

-Office of Environment and Heritage, New South Wales
-Department of Environment and Primary Industries, Victoria
-Department of Primary Industries, Parks, Water and Environment, Tasmania
-Department of Environment, Water and Natural Resources, South Australia
-Department of Land and Resource Management, Northern Territory
-Department of Environmental and Heritage Protection, Queensland
-Department of Parks and Wildlife, Western Australia
-Environment and Planning Directorate, ACT
-Birdlife Australia
-Australian Bird and Bat Banding Scheme
-Australian National Wildlife Collection
-Natural history museums of Australia
-Museum Victoria
-Australian Museum
-South Australian Museum
-Queensland Museum
-Online Zoological Collections of Australian Museums
-Queensland Herbarium
-National Herbarium of NSW
-Royal Botanic Gardens and National Herbarium of Victoria
-Tasmanian Herbarium
-State Herbarium of South Australia
-Northern Territory Herbarium
-Western Australian Herbarium
-Australian National Herbarium, Canberra
-University of New England
-Ocean Biogeographic Information System
-Australian Government, Department of Defence
Forestry Corporation, NSW
-Geoscience Australia
-CSIRO
-Australian Tropical Herbarium, Cairns
-eBird Australia
-Australian Government – Australian Antarctic Data Centre
-Museum and Art Gallery of the Northern Territory
-Australian Government National Environmental Science Program
-Australian Institute of Marine Science
-Reef Life Survey Australia
-American Museum of Natural History
-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania
-Tasmanian Museum and Art Gallery, Hobart, Tasmania
-Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the Contact Us page.

Department of Agriculture Water and the Environment
GPO Box 858
Canberra City ACT 2601 Australia
+61 2 6274 1111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Gypsum St
Blende St
B79
A32
Wills St
Barrier Hwy
Gypsum St
Ryan St
Kanandah Rd
Eyre St
Rockwell St
Bonanza St
B79
Duff St
Kanandah Rd
B79
Kanandah Rd
B79
Broken
Airpo
Google
(https://maps.google.com/maps?ll=-31.980929,141.430662&z=14&t=m&hl=en-US&gl=US&mapclient=apiv3)
Report a map error (https://www.google.com/maps/@-31.980929,141.430662,14z/data=!10m1!1e1!12b1?source=apiv3&rapsrc=apiv3)
Map data ©2021

Appendix C

Planning Certificates

BROKEN HILL
CITY COUNCIL

Quote No 16082

Telephone / Personal Enquiries
Ask for Tracey Stephens

Please address all communications to:
The General Manager
240 Blende Street
PO Box 448
Broken Hill NSW 2880
Phone 08 8080 3300
Fax 08 8080 3424
council@brokenhill.nsw.gov.au
www.brokenhill.nsw.gov.au

ABN 84 873 116 132

Planning Certificate No. 16082
Under Section 10.7
Environmental Planning And Assessment Act, 1979

OFFICE USE ONLY	
Fee:	$133.00
Receipt No:	832739
Applicant Ref:	Info Track
Owner:	Galena Developments Pty Ltd

Applicants Name	Info Track
Postal Address	GPO Box 4029 SYDNEY NSW 2001
DESCRIPTION OF LAND	
Property Address	74-84 Pinnacles Place BROKEN HILL 2880
Property Description	Lot: 57 DP: 258288

A. As at the date of this certificate the abovementioned land is land to which an environmental planning instrument applies. Where an environmental planning instrument applies to the land, details are set out as follows:

Name of Planning Instrument and Date When It Took Effect	Yes /No	Effect of Planning Instrument on Abovementioned Land
Broken Hill Local Environmental Plan 2013 – 30/08/13	Yes	The land is zoned IN1 General Industrial under the existing planning instrument (See development control table – Attachment 2)
State & Regional Environmental Planning Policies	Yes	(see Attachment 1)
Draft State Environmental Planning Policy submitted to the Minister*	No	
Draft Regional Environmental Plan*	No	
Exhibited Draft Environmental Planning Instrument	No	

B. For the purposes of Section 10.7(2) it is advised that as at the date of this certificate the abovementioned land is affected by the matters referred to in Column 1 of the following table:

Column 1	Yes/No	Identification Of The Matter Referred To In Column 1 And The Manner In Which It Applies To Or Affects The Land
Development Control Plan	Yes	City of Broken Hill Development Control Plan 2016
Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land	Yes	Minimum lot size of 230m².
Whether the land includes or comprises critical habitat	No	
Whether the land is in a heritage conservation area	No	
Whether an item of environmental heritage is situated on the land.	No	
Whether the subject land is land on which complying development may be carried out under SEPP (Exempt and Complying Development Codes) 2008.		
Rural Housing Code	No	
General Housing Code	No	
Demolition Code	Yes	
General Development Code	Yes	
Housing Alterations Code	Yes	
General Commercial & Industrial Code	Yes	
Subdivisions Code	Yes	
Inland Code	Yes	
Section 38 or 39 of the Coastal Protection Act, 1979*	No	
Section 15 of the Mines Subsidence Compensation Act, 1961	No	Whether the land has been proclaimed a mine subsidence district.
Whether or not the land is affected by any road widening or road realignment under- i) Part 3 Division 2 of the Roads Act, 1993; ii) any environmental planning instrument; or iii) any resolution of the Council	No	
Whether or not the land is affected by a policy: (a) Adopted by the Council, or (b) Adopted by any other public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the	No	

Council, that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).		
Whether or not development on the land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls.	No	
Whether or not development on the land or part of the land for any other purpose is subject to flood related development controls.	No	
Column 1	Yes/No	Identification Of The Matter Referred To In Column 1 And The Manner In Which It Applies To Or Affects The Land
Whether any Environmental Planning Instrument, deemed or draft instrument applying to the land provides for the acquisition of the land by a public authority, under Section 27 of the Act.	No	
Whether a contributions plan applies to the land	Yes	Council has adopted the Broken Hill City Council Section 7.12 Developer Contributions Plan.
Whether the land is biodiversity certified land under the Threatened Species Conservation Act 1995	No	
Whether a biobanking agreement has been entered into under the Threatened Species Conservation Act 1995	No	
Whether some, or all, of the land is bushfire prone	No	
Whether the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies	No	
Whether Council has been notified of an order being made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land	No	Council has not been notified of an order under this Act in relation to this land.
Whether there is a direction by the Minister in force, under section 75P (2) (c1) of the Act, that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land, under Part 4 of the Act ,does not have effect	No	
Whether there is a current Site Compatibility Certificate (Seniors	No	

Housing), of which Council is aware in respect of proposed development on the land		
Whether there is a current Site Compatibility Certificate (Affordable Rental Housing), of which Council is aware in respect of proposed development on the land	No	
Whether there is a valid Site Compatibility Certificate (Infrastructure), of which Council is aware in respect of proposed development on the land	No	
Contaminated Land: Whether Council is aware that, at the date of issuing this certificate, the land is:		
Declared to be significantly contaminated (under the Contaminated Land Management Act 1997).	No	
Subject to a Management Order (under the Contaminated Land Management Act 1997).	No	
Subject to an approved voluntary management proposal (under the Contaminated Land Management Act 1997).	No	
Subject to an ongoing maintenance order (under the Contaminated Land Management Act 1997).	No	
Subject to a site audit statement (under the Contaminated Land Management Act 1997).	No	

* Information is provided only to the extent that the Council has been notified by the Department of Commerce or the Department of Planning.

C. Additional information provided in accordance with Section 10.7(5):

Information	Reply
(a) Has any development consent with respect to the land been granted within the previous two years?	No
(b) What is the current approved use of the property?	Vacant land
(c) Is the current use of the property in accordance with such approval?	Yes
(d) Is the land affected by any resolution of the Council to seek amendment to any environmental planning or draft environmental instrument applying to the land?	No.
(e) Is the land affected by any Interim or Permanent Conservation Order?	No.
(f) Additional contamination information.	This land may contain levels of heavy metals associated with Broken Hill being a mining town. Council has not undertaken testing specific to this property in relation to this matter.
(g) Clearing of native vegetation.	Under the provisions of the Native Vegetation Act 2003 No. 103 approval may be required under the Environmental Planning and Assessment Act, 1979 for the clearing of native vegetation within the Broken Hill Local Government Area.
(h) Other matters affecting the property.	There is the possibility that structures on the parcel of land being purchased may not have been constructed entirely upon or within the relevant boundaries.

The above information has been taken from Council's records, but Council cannot accept responsibility for any omissions or inaccuracy.

The information contained in this certificate needs to be read in conjunction with the provisions of the:

- Environmental Planning and Assessment Act and Regulations.

Date: 16/7/2020 *General Manager per:*

Any request for further information in connection with the above should be directed to

Mrs. T. Stephens - Telephone No. (08) 8080 3300

The name of each State & Regional Environmental Planning Policy that applies to the carrying out of development on the land.

State Environmental Planning Policy No 1 - Development Standards

State Environmental Planning Policy No 4 - Development Without Consent and Miscellaneous Exempt and Complying Development.

State Environmental Planning Policy No 6 - Number Of Storeys In Buildings.

State Environmental Planning Policy No 21 - Caravan Parks.

State Environmental Planning Policy No 22 - Shops And Commercial Premises.

State Environmental Planning Policy No 30 - Intensive Agriculture.

State Environmental Planning Policy No 32 - Urban Consolidation (Redevelopment of Urban Land).

State Environmental Planning Policy No 33 - Hazardous And Offensive Development.

State Environmental Planning Policy No 36 – Manufactured Home Estates.

State Environmental Planning Policy No 50 - Canal Estate Development.

State Environmental Planning Policy No 55 - Remediation Of Land.

State Environmental Planning Policy No 60 - Exempt and Complying Development.

State Environmental Planning Policy No 62 - Sustainable Aquaculture.

State Environmental Planning Policy No 64 - Advertising and Signage.

State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development.

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.

State Environmental Planning Policy (Building Sustainability Index: Basix) 2004.

State Environmental Planning Policy (Temporary Structures) 2007.

State Environmental Planning Policy (Infrastructure) 2007.

State Environmental Planning Policy (Major Development) 2005.

State Environmental Planning Policy - (Affordable Rental Housing) 2009.

State Environmental Planning Policy - (Exempt and Complying Development Codes) 2008.

State Environmental Planning Policy - (Mining, Petroleum Production and Extractive Industries) 2007.

State Environmental Planning Policy - (State and Regional Development) 2011.

State Environmental Planning Policy – (Rural Lands) 2008

Western Division Regional Environmental Planning Policy No 1 – 1989

ATTACHMENT 2 - DEVELOPMENT CONTROL TABLE

ZONE IN1 – General Industrial

1 Objectives of zone

- To provide a wide range of industrial and warehouse land uses.
- To encourage employment opportunities.
- To minimise any adverse effect of industry on other land uses.
- To support and protect industrial land for industrial uses.

2 Permitted without consent

Environmental protection works; Roads.

3 Permitted with consent

Aquaculture; Depots; Funeral homes; Freight transport facilities; General industries; Hardware and building supplies; Industrial training facilities; Kiosks; Landscaping material supplies; Light industries; Neighbourhood shops; Rural supplies; Take away food and drink premises; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres.

Any development not specified in Item 2 or 4

4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Camping grounds; Caravan parks; Cemeteries; Child care centres; Commercial premises; Eco-tourist facilities; Educational establishments; Entertainment facilities; Exhibition homes; Exhibition villages; Farm buildings; Forestry; Function centres; Health services facilities; Home-based child care; Home businesses; Home occupations; Home occupations (sex services); Information and education facilities; Marinas; Moorings; Mooring pens; Places of public worship;; Public administration buildings; Registered clubs; Residential accommodation; Respite day care centres; Tourist and visitor accommodation; Wharf or boating facilities.

BROKEN HILL
CITY COUNCIL

Quote No 16083

Telephone / Personal Enquiries
Ask for Tracey Stephens

Please address all communications to:
The General Manager
240 Blende Street
PO Box 448
Broken Hill NSW 2880
Phone 08 8080 3300
Fax 08 8080 3424
council@brokenhill.nsw.gov.au
www.brokenhill.nsw.gov.au

ABN 84 873 116 132

Planning Certificate No. 16083
Under Section 10.7
Environmental Planning And Assessment Act, 1979

OFFICE USE ONLY	
Fee:	$133.00
Receipt No:	835198
Applicant Ref:	Info Track
Owner:	Galena Developments Pty Ltd

Applicants Name	Info Track
Postal Address	GPO Box 4029 SYDNEY NSW 2001
DESCRIPTION OF LAND	
Property Address	74-84 Pinnacles Place BROKEN HILL 2880
Property Description	Lot: 58 DP: 258288

A. As at the date of this certificate the abovementioned land is land to which an environmental planning instrument applies. Where an environmental planning instrument applies to the land, details are set out as follows:

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Draft State Environmental Planning Policy submitted to the Minister*	No	
Draft Regional Environmental Plan*	No	
Exhibited Draft Environmental Planning Instrument	No	

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Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land	Yes	Minimum lot size of 230m².
Whether the land includes or comprises critical habitat	No	
Whether the land is in a heritage conservation area	No	
Whether an item of environmental heritage is situated on the land.	No	
Whether the subject land is land on which complying development may be carried out under SEPP (Exempt and Complying Development Codes) 2008.		
Rural Housing Code	No	
General Housing Code	No	
Demolition Code	Yes	
General Development Code	Yes	
Housing Alterations Code	Yes	
General Commercial & Industrial Code	Yes	
Subdivisions Code	Yes	
Inland Code	Yes	
Section 38 or 39 of the Coastal Protection Act, 1979*	No	
Section 15 of the Mines Subsidence Compensation Act, 1961	No	Whether the land has been proclaimed a mine subsidence district.
Whether or not the land is affected by any road widening or road realignment under- i) Part 3 Division 2 of the Roads Act, 1993; ii) any environmental planning instrument; or iii) any resolution of the Council	No	
Whether or not the land is affected by a policy: (a) Adopted by the Council, or (b) Adopted by any other public authority and notified to the Council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the	No	

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Whether any Environmental Planning Instrument, deemed or draft instrument applying to the land provides for the acquisition of the land by a public authority, under Section 27 of the Act.	No	
Whether a contributions plan applies to the land	Yes	Council has adopted the Broken Hill City Council Section 7.12 Developer Contributions Plan.
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Whether Council has been notified of an order being made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land	No	Council has not been notified of an order under this Act in relation to this land.
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(e) Is the land affected by any Interim or Permanent Conservation Order?	No.
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State Environmental Planning Policy No 33 - Hazardous And Offensive Development.

State Environmental Planning Policy No 36 – Manufactured Home Estates.

State Environmental Planning Policy No 50 - Canal Estate Development.

State Environmental Planning Policy No 55 - Remediation Of Land.

State Environmental Planning Policy No 60 - Exempt and Complying Development.

State Environmental Planning Policy No 62 - Sustainable Aquaculture.

State Environmental Planning Policy No 64 - Advertising and Signage.

State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development.

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004.

State Environmental Planning Policy (Building Sustainability Index: Basix) 2004.

State Environmental Planning Policy (Temporary Structures) 2007.

State Environmental Planning Policy (Infrastructure) 2007.

State Environmental Planning Policy (Major Development) 2005.

State Environmental Planning Policy - (Affordable Rental Housing) 2009.

State Environmental Planning Policy - (Exempt and Complying Development Codes) 2008.

State Environmental Planning Policy - (Mining, Petroleum Production and Extractive Industries) 2007.

State Environmental Planning Policy - (State and Regional Development) 2011.

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Western Division Regional Environmental Planning Policy No 1 – 1989

ATTACHMENT 2 - DEVELOPMENT CONTROL TABLE

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Aquaculture; Depots; Funeral homes; Freight transport facilities; General industries; Hardware and building supplies; Industrial training facilities; Kiosks; Landscaping material supplies; Light industries; Neighbourhood shops; Rural supplies; Take away food and drink premises; Timber yards; Vehicle sales or hire premises; Warehouse or distribution centres.

Any development not specified in Item 2 or 4

4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Camping grounds; Caravan parks; Cemeteries; Child care centres; Commercial premises; Eco-tourist facilities; Educational establishments; Entertainment facilities; Exhibition homes; Exhibition villages; Farm buildings; Forestry; Function centres; Health services facilities; Home-based child care; Home businesses; Home occupations; Home occupations (sex services); Information and education facilities; Marinas; Moorings; Mooring pens; Places of public worship;; Public administration buildings; Registered clubs; Residential accommodation; Respite day care centres; Tourist and visitor accommodation; Wharf or boating facilities.

NSW LRS - Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 57/258288

SEARCH DATE	TIME	EDITION NO	DATE
6/7/2020	3:14 PM	4	1/9/2018

NO CERTIFICATE OF TITLE HAS ISSUED FOR THE CURRENT EDITION OF THIS FOLIO. CONTROL OF THE RIGHT TO DEAL IS HELD BY AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED.

LAND

LOT 57 IN DEPOSITED PLAN 258288
LOCAL GOVERNMENT AREA BROKEN HILL
PARISH OF PICTON COUNTY OF YANCOWINNA
TITLE DIAGRAM DP258288

FIRST SCHEDULE

GALENA DEVELOPMENTS PTY LTD
GLOBE IBH PTY LTD
AS TENANTS IN COMMON IN EQUAL SHARES (T AG120748)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS
2 AG322708 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

PRINTED ON 6/7/2020

NSW LRS - Title Search

NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 58/258288

SEARCH DATE	TIME	EDITION NO	DATE
6/7/2020	3:11 PM	4	1/9/2018

NO CERTIFICATE OF TITLE HAS ISSUED FOR THE CURRENT EDITION OF THIS FOLIO. CONTROL OF THE RIGHT TO DEAL IS HELD BY AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED.

LAND

LOT 58 IN DEPOSITED PLAN 258288
LOCAL GOVERNMENT AREA BROKEN HILL
PARISH OF PICTON COUNTY OF YANCOWINNA
TITLE DIAGRAM DP258288

FIRST SCHEDULE

GALENA DEVELOPMENTS PTY LTD
GLOBE IBH PTY LTD
AS TENANTS IN COMMON IN EQUAL SHARES (T AG120748)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 LAND EXCLUDES MINERALS
2 AG322708 MORTGAGE TO AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

PRINTED ON 6/7/2020

Appendix D

Site Photographs

PHOTOGRAPHIC LOG

Client Name:	**Site Location:**	**Project No.**
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	**Date:**
1	12/01/2021

Direction Photo Taken:
North-west

Description:
BH001 pre-condition

Photo No.	**Date:**
2	12/01/2021

Direction Photo Taken:
South-west

Description:
BH003 pre-condition

PHOTOGRAPHIC LOG

Client Name:	**Site Location:**	**Project No.**
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	**Date:**
3	14/01/2021

Direction Photo Taken:
North - west

Description:
BH002 – post condition

Photo No.	**Date:**
4	14/01/2021

Direction Photo Taken:
North - west

Description:
BH003 post-condition

PHOTOGRAPHIC LOG

Client Name:	**Site Location:**	**Project No.**
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	**Date:**
5	14/01/2021

Direction Photo Taken:
South-east

Description:
BH006 post-condition

Photo No.	**Date:**
6	14/01/2021

Direction Photo Taken:
North-west

Description:
BH001 post condition

PHOTOGRAPHIC LOG

Client Name:	**Site Location:**	**Project No.**
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	**Date:**
7	14/01/2021

Direction Photo Taken:
North-west

Description:
BH005 post-condition

Photo No.	**Date:**
8	14/01/2021

Direction Photo Taken:
South-west

Description:
Possible waste oil observed on top of and in and Intermediate Bulk Container (IBC). The substance appears to have spilled over the edge and onto soil directly below. AECOM collected soil samples from stained and/or odorous soils beside the IBC.

PHOTOGRAPHIC LOG

Client Name:	**Site Location:**	**Project No.**
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	**Date:**
9	14/01/2021

Direction Photo Taken:
West

Description:
Black staining on surface soil surrounding IBC spill. Stain footprint was approximately 1.5m x 0.5m.

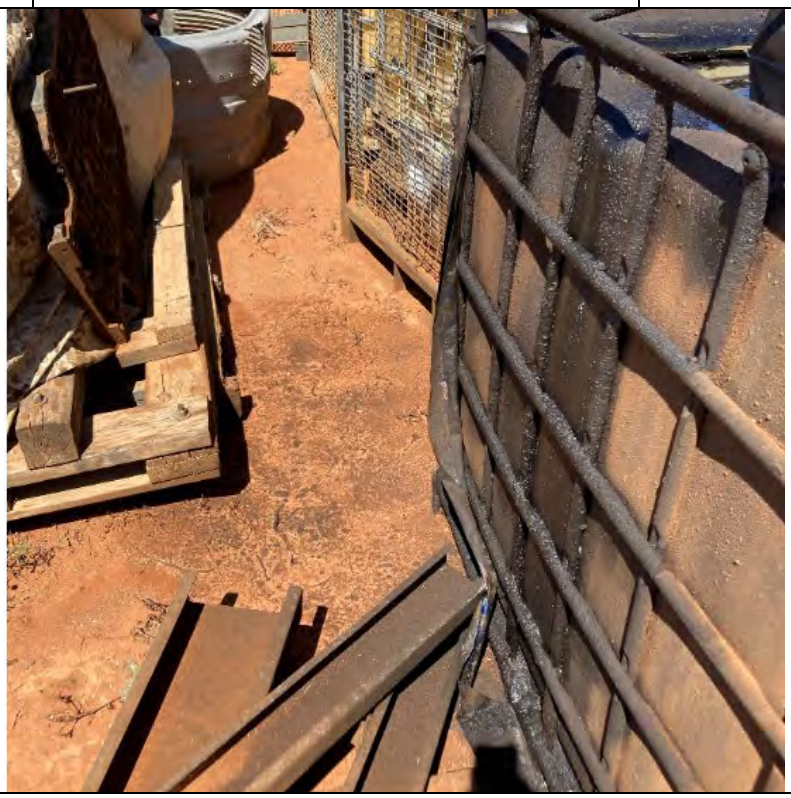

Photo No.	**Date:**
10	14/01/2021

Direction Photo Taken:
South-east

Description:
Fragment of building waste at south-eastern boundary of Site. Fragment sample taken from pictured fragment for analysis of asbestos absence/presence.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	Date:
11	14/01/2020

Direction Photo Taken:
South-west

Description:
Building waste and empty drums in the south-east corner of Site. Drums and jerry cans dumped on tarps or directly onto the ground. No bunded area observed. No odour or staining.

Photo No.	Date:
12	14/01/2020

Direction Photo Taken:
South-east

Description:
IBC, new and old building material and vehicles along southern boundary of Site.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	Date:
13	14/01/2020

Direction Photo Taken:
East

Description:
Drums and IBCs stored on pallets (no visible bunding). Some containing mechanical fluids and others unlabelled and unable to be opened.

Photo No.	Date:
14	14/01/2020

Direction Photo Taken:
East

Description:
New and old tyres stored in the centre of the Site

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	Date:
15	14/01/2020

Direction Photo Taken:
West

Description:
Stockpile of material located along turning circle/track on Site. No visual signs of contamination or odour observed. Material appears similar to shallow soils excavated during investigation.

Photo No.	Date:
16	14/01/2020

Direction Photo Taken:
West

Description:
Stockpile along western fence line of site. No visual signs of contamination or odour observed. Material appears similar to shallow soils excavated during investigation.

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No.	Date:
17	14/01/2021

Direction Photo Taken:
West

Description:
Building material stored in the centre of Site. Mostly old / waste material.

Photo No.	Date:
18	14/01/21

Direction Photo Taken:
South-east

Description:
Battery waste dumped along southern boundary of Site

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Photo No. 19	Date: 14/01/2021
Direction Photo Taken: West	
Description: Stockpiles on western portion of the property. Material comprised primarily of the clayey silt and sand found during soil boring across site. Some large cobble-sized rocks and wooden planks also observed. No visual or olfactory contamination observed.	

Photo No. 20	Date: 14/01/21
Direction Photo Taken: West	
Description: Stockpile on western boundary of site. Material appears to be similar clayey silt observed across the surface of the site. No visual or olfactory contamination observed.	

PHOTOGRAPHIC LOG

Client Name:	Site Location:	Project No.
AGL	74 and 80 Pinnacles Place, Broken Hill	60619153

Appendix E

Borelogs

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Soil and Rock Logging Explanatory Notes and Abbreviations

AS1726-2017

Soil and rock descriptions on the engineering log sheets are in accordance with AS1726 – 2017-Geotechnical Site Investigations. For full details of the logging standards refer to Section 6 of AS1726-2017. A summary of the sequence of descriptive terms used to describe soil and rock on the engineering log sheets is outlined below.

AECOM logs prepared prior to July 2017 were prepared generally in accordance with AS1726 - 1993. The soil classification system adopted in AS1726-2017 differs from the Unified Soil Classification System (USCS) and the logging standards recommended in AS1726-1993 significantly in the criteria used to distinguish between coarse and fine grained soils (see Soil Description below).

Soil Description

SOIL NAME: plasticity or particle characteristics of major component; colour; structure; secondary and other minor components. The AS1726 Group Symbol; consistency/density; and moisture condition are listed as abbreviations in separate columns. Geological origin and additional observations as required such as soil origin i.e. FILL, ALLUVIUM and other significant details are recorded in a separate column.

The major soil component (capitalised) is assessed after removal of cobble size or larger components (>63mm), soils containing 35% or more passing the 75 micron sieve are classified as fine grained soils. Fine grained soils are classified on the behaviour of the fine grained component, not percentage of silt and clay.

This is a significant departure from the previous AS1726-1993 where soils had to contain 50% or more passing the 75 micron sieve to be classified as a fine grained soil. This results in materials containing 50% or more coarse grained material previously described as coarse grained (e.g. “sandy CLAY/clayey SAND” or “silty SAND”) now being described as fine grained soils if they contain at least 35% fines (e.g. “sandy CLAY” or “sandy SILT”). Additionally, many fine grained soils previously described as containing both silt and clay (e.g. “silty CLAY”, “CLAY: with silt”) are now described as either CLAY or SILT with no mention of the other fine component. The exception is where behaviour is borderline, in which case “clayey SILT” is used.

Rock Description

ROCK NAME: grain size and type; colour; fabric and texture; structure; minor components; and bedding dip. The geological formation; rock strength; weathering/alteration; mass defect spacing; and defect descriptions are listed under separate columns.

Extremely weathered material is prefixed as such followed by a description of the soil properties. Similarly in situ weathering or infilling of defects greater than 100 mm thick with soil or extremely weathered material is described using relevant soil properties in the description column of the engineering log sheet.

Field Samples and In Situ Tests

Field samples and tests are recorded in the relevant column using abbreviations described under General Symbols and Abbreviations.

Field tests have been used to assess soil consistency/density and rock strength, and unless specifically stated otherwise, have been transferred directly to the engineering log sheets and not modified to coincide with laboratory results. Field descriptions may be used as an independent estimate of material properties which can be correlated with other data.

Organic and Artificial Material

Soil containing greater than 25% organic material is described as PEAT. Soils containing between 2% and 25% organic material are prefixed by “Organic” (e.g. Organic CLAY). TOPSOIL is a specific soil origin that may also contain both living and dead organic materials. Organic matter is described using terms such as fibrous peat, charcoal, wood fragments, roots (>2mm diameter) or root fibres (<2mm diameter)

Any material containing evidence that it has been placed by man-made mechanisms, including compacted embankment materials and materials containing evidence of artificial materials is prefixed as FILL. Waste fill is described using terms such as domestic refuse, oil, bitumen, brickbats, concrete rubble, fibrous plaster, wood pieces, wood shavings, sawdust, iron filings, drums, steel bars, steel scrap, bottles, broken glass, or leather.

Organic and artificial material cannot be adequately described using soil classification terms. They are mentioned, at the end of the description using qualitative terms such as “rare”, “occasional” or “frequent”, e.g. “SAND with rare gravel size brick fragments”. These qualitative terms are relative, for which no definition of percentage is given.

Structure

The structure of soil (or rock) is usually applicable to cohesive soils or rock. Typical terms that are used on the engineering log sheets include*; intact* (no joints), *fissured* (closed joints), *voided*, *vesicular, slickensided* (sheared), *interbedded*, *laminated* and *cemented*.

Plasticity

Descriptive Term	Range of Liquid Limit (%)
Low plasticity	≤ 35
Medium plasticity	> 35 ≤ 50
High plasticity	> 50

Colour

Colour has been assessed in the “moist” condition using basic colours and the modifiers pale, dark and mottled. Borderline colours are described as a combination of the two colours (e.g. red-brown). When describing the colour of defect infill, the following abbreviations are used in the defect description column.

Moisture Condition

Term	Symbol	Description	
		Cohesive	Granular
Dry	D	Cohesive; hard and friable or powdery, very dry of plastic limit	Cohesion-less and free running
Moist	M	Soil feels cool, darkened in colour, can be moulded, typically with moisture content (w) between plastic limit (PL) and liquid limit (LL) as indicated	Soil feels cool, darkened in colour, tends to cohere
Wet	W	Soil feels cool, dark, usually weakened, free water, typically with moisture content (w) approximately at or wet of liquid limit (LL) as indicated	Soil feels cool, darkened in colour, tends to cohere, free water

Geological Origin

Term		Description
Weathered in Place Material	Extremely weathered material	Structure and fabric of parent rock visible (NOTE – described with soil terminology)
	Residual Soil	Structure and fabric of parent rock not visible
Transported Soils	Aeolian soil	Deposited by wind
	Alluvial soil	Deposited by streams and rivers
	Colluvial soil	Deposited on slopes (transported downslope)
	Lacustrine soil	Deposited by lakes
	Marine soil	Deposited in oceans, bays, beaches and estuaries
TOPSOIL	Mantle of surface and/or near surface soil often but not always defined by high levels of organic material (prefix to soil description)	
FILL	Soil, rock or refuse placed by humans in either controlled or uncontrolled conditions (prefix to soil description)	

Where there is doubt to origin ‘possibly’ or ‘probably’ are used.

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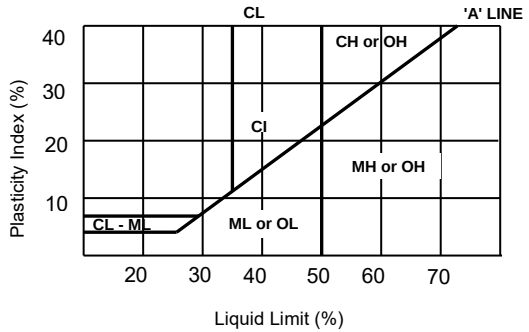
Soil Classification

Field Identification Procedures (Excluding particles larger than 63mm and basing fractions on estimated mass)				Log Graphic	Group Symbol	Typical Names	Secondary and Minor Components	Laboratory Classification Criteria	
Coarse Grained Soils More than 65% of material less than 63 mm is larger than 0.075 mm	GRAVEL More than 50% of coarse fraction is larger than 2.36mm	clean GRAVEL (<5% fines)	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength		GW	Well graded GRAVEL or sandy GRAVEL	Fine Grains >12% Coarse Grains >30% Secondary/Minor Descriptor Prefix "sandy", "silty" etc. Add "with sand/silt" etc. Add "trace sand/silt" etc.	Laboratory grain size curve used in identifying the fractions as given under field identification	$c_u = \frac{D_{60}}{D_{10}}$ Cu ≥4 $c_c = \frac{(D_{30})^2}{D_{10} x D_{60}}$ Cc=1 – 3
			Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength		GP	Poorly graded GRAVEL or sandy GRAVEL			<5% fines, not meeting all gradation requirements for GW.(i.e. Cu < 4 or Cc ≠ 1 – 3)
		GRAVEL (≥12% fines)	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength		GM	silty GRAVEL or silty sandy GRAVEL	>5% ≤12%		≥12% Fines with Atterberg limits below 'A' line
			'Dirty' materials with excess of plastic fines, medium to high dry strength		GC	clayey GRAVEL or clayey sandy GRAVEL	≤5%		≥12% Fines with Atterberg limits above 'A' line
	SAND More than 50% of coarse fraction is smaller than 2.36mm	Clean SAND (<5% fines)	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength		SW	Well graded SAND or gravelly SAND	>15% ≤30% ≤15%		$c_u = \frac{D_{60}}{D_{10}}$ Cu ≥6 $c_c = \frac{(D_{30})^2}{D_{10} x D_{60}}$ Cc=1–3
			Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength		SP	Poorly graded SAND or gravelly SAND			<5% fines, not meeting all gradation requirements for SW. (i.e. Cu < 6 or Cc ≠ 1 – 3)
		SAND (≥12% fines)	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength		SM	silty SAND			≥12% Fines with Atterberg limits below 'A' line.
			'Dirty' materials with excess of plastic fines, medium to high dry strength		SC	clayey SAND			≥12% Fines with Atterberg limits above 'A' line.
Fine Grained Soils 35% or more of material less than 63 mm is smaller than 0.075 mm	IDENTIFICATION PROCEDURES ON FRACTIONS < 0.2 mm						Secondary fine grained soil not described except for borderline SILT/CLAY mixtures described as "clayey SILT" Coarse grained Secondary/Minor descriptors: >30% prefix "gravelly "or "sandy" as appropriate >15% <30% add "with sand/gravel" as appropriate ≤15% add "trace sand/gravel" as appropriate	Laboratory classification from Modified Cassagrande Chart	
		LIQUID LIMIT	DRY STRENGTH	DILATANCY	TOUGHNESS				
	SILT	>50%	Low to medium	None to slow	Low to medium	MH	Inorganic SILT, gravelly SILT, sandy SILT		
		≤50%	None to low	Slow to rapid	Low	ML	Inorganic SILT and very fine sand, rock flour, silty or clayey fine sand or silt.		
			Low to medium	Slow	Low	OL	Organic SILT (2%<organics<25%)		
	Borderline SILT/ CLAY	≤35%	Low to Medium	None to slow	Low to Medium	ML-CL	clayey SILT		
	CLAY	>50%	High to very high	None	High	CH	Inorganic CLAY, sandy CLAY, gravelly CLAY		
		>35 and ≤50%	Medium to high	None to slow	Medium	CI			
		≤35%				CL			
		>35%	Medium to high	None to very slow	Low to medium	OH	Organic CLAY (2%<organics<25%)		
PEAT (>25% organic by dry weight)			Readily identified by colour, odour, spongy feel and frequently by fibrous texture			Pt	PEAT, sandy PEAT		

Modified Casagrande Chart for classification of fine-grained soils

Boundary classifications – Soils possessing characteristics of two groups are designated by combinations of group symbols. For example: GP-GC for gravel with between 5 and 12% clay fines; CI-CH for clay soils where field estimates of plasticity are borderline between medium and high

Other log graphics: FILL, TOPSOIL, ASPHALT, CONCRETE, sandy GRAVEL, gravelly SAND, gravelly SILT, sandy SILT, gravelly CLAY, sandy CLAY

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Sedimentary and Metamorphic Rock Types, Grain Size, Defect Spacing and Planar Structure

Grain Size/ Spacing Thickness	Soil Grain Size Term	Rock Type							Defect Spacing Term	Bedding Thickness Term
		Sedimentary				Metamorphic		Igneous/ Metamor-phic grain size		
		Deposited rock type	≥90% carbonate (prefix IMPURE 50%-90%)		Volcanic ejecta	Foliated	Non-Foliated			
			Low porosity	Porous						
> 2m	large BOULDERS	CONGLOMERATE (larger rounded grains in a finer matrix) *or* BRECCIA (angular or irregular rock fragments in a finer matrix)	LIMESTONE (predominantly $CaCO^3$) or DOLOMITE (predominantly $CaMgCO^3$)	CALCIRUDITE	AGGLOMERATE (rounded grains in a finer matrix) *or* VOLCANIC BRECCIA (angular or irregular fragments in a finer matrix)	GNEISS	MARBLE (crystalline $CaCO^3$)/ QUARTZITE (fused quartz)/ SERPENTINITE (mafic igneous)/ HORNFELS (fine thermal)	COARSE	VERY WIDE (VW)	VERY THICKLY BEDDED
0.6 - 2m	medium BOULDERS								WIDE (W)	THICKLY BEDDED
0.2 - 0.6 m	small BOULDERS								MEDIUM (M)	MEDIUM BEDDED
60 - 200 mm	COBBLES								CLOSE (C)	THINLY BEDDED
20 - 60 mm	coarse GRAVEL								VERY CLOSE (VC)	LAMINATED
6 - 20 mm	medium GRAVEL								EXTREMELY CLOSE (EC)	THINLY LAMINATED
2 - 6 mm	fine GRAVEL								-	VERY THINLY LAMINATED
0.6 - 2.0 mm	coarse SAND	SANDSTONE/ GREYWACKE (rock fragments)/ ARKOSE (mainly feldspar)/ QUARTZOZE SANDSTONE (quartz and siliceous cement)		CALCARENITE	TUFF	SCHIST		MEDIUM		-
0.2 - 0.6 mm	medium SAND									
0.06 - 0.2 mm	Fine SAND									
2 - 60 µm	SILT	MUDSTONE/ SHALE (fissile)/ LAMINITE (bedded)		CALCISILTITE	Fine grained TUFF	PHYLLITE (undulose)/ SLATE (planar)		FINE		
< 2 µm	CLAY	SILTSTONE / CLAYSTONE		CALCILUTITE						

Note: EVAPORITE is sedimentary rock which consist mainly of salts e.g.: Halite (NaCl), Anhydrite and Gypsum ($CaSO_4$); COAL is mostly organic sedimentary rock that consists of indurated accumulations of plant debris

Classification of Igneous Rocks (Massive Crystalline)

Grain Size (mm)	Much quartz, pale (felsic)	⟷	Little quartz, dark (mafic)
COARSE (>2)	GRANITE	DIORITE	GABBRO
MEDIUM (0.06-2)	MICROGRANITE	MICRODIORITE	DOLERITE
FINE (<0.06)	RHYOLITE	ANDESITE	BASALT

Note: PEGMATITE consist of large crystals often forming a dyke or vein
VOLCANIC GLASS and OBSIDIAN are rocks that have cooled quickly and have a glassy texture
APLITE may occur as light coloured veins of quartz and feldspar in other igneous rocks
PORPHYRY is an igneous rock consisting of large crystals in a much finer matrix

Duricrust (soils cemented to rock)

FERRICRETE (iron oxide cemented)
SILCRETE (silica cemented)
GYPCRETE (salt cemented)
CALCRETE ($CaCO_3$ cemented – dominated by replacement features)

No Core

NO CORE (description, defect and strength logs show beak in logging)

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Grain Size

Soil Type	Fine Grained Soil		Coarse Grained Soil						Oversize
	Clay	Silt	Sand			Gravel			Cobbles
			Fine	Medium	Coarse	Fine	Medium	Coarse	
Grain Size	< 2 µm	2-75 µm	0.075-0.21 mm	0.21-0.6 mm	0.6-2.36 mm	2.36-6.7 mm	6.7-19 mm	19-63 mm	63-200 mm
Field Guide	Shiny, Not visible under 10x	Dull, Visible under 10x	Visible by eye	Visible at < 1 m	Visible at < 3 m	Visible at < 5 m	Road gravel	Rail ballast	Beaching

Boulders (>200mm) and Cobbles (63-200mm) are considered oversize materials and are separated from the sample prior to describing the soil. Where cobbles or boulders are present the soil description is preceded by 'MIXTURE OF SOIL AND COBBLES/BOULDERS' with the word order indicating the dominant proportion first followed by the soil description and the estimate proportion of oversize materials indicating whether they are supported by the soil matrix.

Grain Shape

	Angular	Sub-angular	Sub-rounded	Rounded
Equi-dimensional particles				

Essentially two-dimensional particles are described as "flaky" or "platy" while essentially one dimensional particles are described as "elongated". Particle composition should be described where significant (e.g. "quartz sand")

Relative Density (non-cohesive soils)

Term	Very Loose	Loose	Medium Dense	Dense	Very Dense
Symbol	VL	L	MD	D	VD
Density Index (%)	≤ 15	> 15 ≤ 35	> 35 ≤ 65	> 65 ≤ 85	> 85
Uncorrected SPT (N) Blow count #	0 - 4	4 - 10	10 - 30	30 - 50	> 50
Field Guide	Ravels	Shovels easily	Shovelling very difficult	Pick required	Pick difficult

NOTE: Density Index as a measure of relative density only applies to dry cohesionless soils. Correlations between relative density and SPT vary considerably depending on grain size and angularity, overburden pressure, moisture content, fines content, cementation and SPT efficiency. The above SPT correlation is a rough field guide for clean, dry, fine to medium sands at a depth of 5 to 15m after Gibbs & Holtz (1957). Where relative density is important to design, more detailed correlations taking into account the factors discussed above should be considered.

Consistency (cohesive soils)

Based on undrained strength (S_u) estimated in field from pocket penetrometer or shear vane

Term	Very Soft	Soft	Firm	Stiff	Very Stiff	Hard
Symbol	VS	S	F	St	VSt	H
Undrained Shear Strength (kPa)	≤12	>12 ≤ 25	>25 ≤ 50	>50 ≤100	>100 ≤ 200	>200
Approx. SPT (N) Blow count #	0 - 2	2 - 4	4 – 8	8 - 15	15 - 30	> 30
Field Guide	Exudes between the fingers when squeezed	Can be moulded by light finger pressure	Can be moulded by strong finger pressure	Cannot be moulded by fingers. Can be indented by thumb	Can be indented by thumb nail	Can be indented with difficulty with thumb nail

NOTE: SPT is not a direct measure of consistency and ranges are only a rough field guide. Plasticity, fissuring, moisture, and sand and gravel content can all affect SPT values dramatically.

Rock Strength

Term	Soil	Very Low	Low	Medium	High	Very High	Extremely High
SYMBOL	soil	VL	L	M	H	VH	EH
UCS (MPa)	≤ 0.6	> 0.6 ≤ 2	>2 ≤ 6	> 6 ≤ 20	> 20 ≤ 60	> 60 ≤ 200	> 200
$I_{s\,(50)}$ (MPa) see note 1&3	-	> 0.03 ≤ 0.1	> 0.1 ≤ 0.3	> 0.3 ≤ 1	> 1 ≤ 3	> 3 ≤ 10	> 10
FIELD GUIDE	Soil strength – logged as soil using consistency	Material crumbles under firm blow with sharp end of pick. Can be peeled with a knife. Too hard to cut a triaxial sample by hand. Pieces up to 3 cm thick can be broken by finger pressure.	Easily scored with a knife. Indentations of 1mm - 3mm in the specimen with firm blows of the pick point. Has dull sound under hammer. A piece of core 150 mm long 50 mm diameter may be broken by hand	Readily scored with a knife. A piece of core 150 mm long 50 mm diameter can be broken by hand with difficulty	A piece of core 150 mm long 50 mm diameter cannot be broken by hand but can be broken with by a pick with a single firm blow. Rock rings under hammer	Hand specimen breaks with a pick after more than one blow. Rock rings under hammer	Specimen requires many blows with a geological pick to break through intact material. Rock rings under hammer

Note:
1. The strength of rock material should be based on UCS of materials close to in situ moisture content. $I_{s(50)}$ should only be used where not practical to undertake UCS tests
2. Anisotropy of rock material samples may affect the field assessment of strength
3. The unconfined compressive typically ranges from 10 to 20 times the $I_{s(50)}$ but the multiplier may vary widely for different rock types

Degree of Weathering / Alteration

Weathering and alteration relate to the rock fabric. Both involve physical and chemical changes to the rock due to changes in pressure, temperature, moisture and chemical environment. Weathering is in response to changes from exposure at the earth's surface while alteration is caused by hot liquids or gasses at depth. The distinction between weathering and alteration is important because they are likely to have different distribution patterns.

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Degree of Weathering / Alteration		Weathering Symbol/ Alteration Symbol		Weathering/ Alteration Description
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 but the soil has not been significantly transported.
Extremely Weathered / Extremely Altered		XW / XA		Material is weathered/ altered to such an extent that it has soil properties. Mass structure and material texture of original rock are still visible. Logged as "Extremely weathered/ altered material" and described as a soil.
Highly Weathered / Highly Altered	Distinctly Weathered/ Distinctly Altered	HW / HA	DW/ DA	The whole of the rock material is discoloured usually by staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is changed by weathering/alteration. Some primary minerals weathered to clay minerals. Porosity may be increased by leaching, or may be decreased due to deposition of weathering product/precipitation of secondary minerals in pores.
Moderately Weathered / Moderately Altered		MW / MA		The whole of the rock material is discoloured usually by staining or bleaching to the extent that the colour of the original rock is not recognisable but shows little or no change in strength from fresh rock.
Slightly Weathered / Slightly Altered		SW / SA		Rock is partially discoloured (with staining or bleaching along joints in the case of weathering) but shows little or no change in strength from fresh rock.
Fresh		FR		Rock shows no sign of decomposition of individual minerals or colour changes.

NOTE: 1. The term "Extremely Weathered/Altered rock" as a description is misleading. Described as Extremely weathered/altered material" followed by material description as a soil.
2. DW/ DA = Distinctly Weathered/Altered is used where it is not practical to distinguish between HW/HA and MW/MA on basis of strength change

In some instances it may be appropriate to describe weathering as part of a rock mass classification system. Where this is used the rock mass classification including the specifics of the weathering related to each rock class is described in the body of the report.

Common Defects in Rock Masses

Defects are described in the description column in the following order, defined by abbreviations:

Type; dip/direction; planarity; roughness; infill/coating; colour. To indicate the defect has been healed, healed is printed at before the defect type.

E.g. P,30/145°,PL,ro,1mm,CH,gy indicates a parting with 30° dip, 145° dip direction, planar, rough surfaces, 1mm thick, filled with grey high plasticity clay.

Defects with a perpendicular thickness up to 10 mm thick are described as partings or joints. Defects 10mm to 100mm thick perpendicular to the defect are described as seams or zones. Defects greater than 100mm thick or intersecting the full width of the core for more than 100mm are described as new material strata on the log.

Defects can be either described individually or grouped into generalised defect sets with similar properties. Individual defects are marked with a leader on the left side of the defect portion of the log, while generalised defects are written on the right side of the defect description area of the log. The extent to which defects are described individually or generalised depends on the nature of the core being logged.

Defect Type

Log Symbol		Appearance	Term		Definition
P			**Parting**		A surface or crack, parallel or sub-parallel to layering or planar anisotropy (bedding or cleavage), across which the rock has little or no tensile strength. May be open or closed
J			**Joint**		A surface or crack, with no apparent shear displacement across which the rock usually has little tensile strength, but which is not parallel or sub-parallel to bedding/cleavage.
S			**Sheared Surface#**		A near planar, curved or undulating surface which is usually smooth, polished or slickensided and which shows evidence of shear displacement.
SZ			**Sheared Zone#**		Zone of rock material with roughly parallel near planar, curved or undulating boundaries cut by closely spaced joints, sheared surfaces or other defects. Some of the defects are usually curved and intersect to divide the mass into lenticular or wedge shaped blocks.
MB and DL			**Mechanical Break**		A break in rock mass not caused by natural effects. Example causes include drilling, testing and storage (DL used for break caused by drill core lift)
SH			**Seams**	**Sheared Seam#**	Seam of roughly parallel boundaries of rock substance cut by closely spaced joints or cleavage surfaces.
CR				**Crushed Seam#**	Seam with roughly parallel boundaries composed of mainly angular fragment of the host rock substance.
NF	SS*			**Infilled Seam**	Seam with distinct roughly parallel boundaries. The infill is caused by migration of soil into open joints.
EW				**Extremely Weathered Seam**	Seam of soil substance weathered from host rock.

NOTES: # sheared, surfaces, sheared zones, sheared seams and crushed seams are generally faults in geological terms.
* SS = Soil Seam where not possible to determine origin
Healed defects are preceded by "healed"

Defect Planarity

Symbol	Description
PL	planar
CU	curved
UN	undulating
ST	stepped
IR	irregular

NOTE: where large scale waviness is observed it should be further described

Defect Roughness

Symbol	Description
vr	Very Rough
ro	Rough
sm	Smooth
po	Polished
sl	Slickensided

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Infill/Coating

Symbol	Description
cn	clean
co	coated
op	open/voided
sn	stained
vn	veneered
Fe	Iron Oxide
Qz	Quartz
X	Carbonaceous

Vesicularity

Symbol	Description	Porosity
D	Dense	Negligible
NV	Non-vesicular	< 10%
SV	Slightly vesicular	10 - 20%
HV	Highly vesicular	> 20%

Cementation and Duricrust

'Weakly cemented' soils are easily disaggregated by hand in air or water.

'Moderately cemented' soils require effort to disaggregate the soil by hand in air or water.

Consistent cementation throughout the material is classified as a 'Duricrust' and logged as a rock

Duricrust Mass Grade

Grade	Term	Description
DI	Massive or Hardspan	>90% duricrust rock forms continuous framework
DII	Vuggy or Patchy	50-90% duricrust rock forming continuous framework around soil(vuggy) or rock (patchy) materials
DIII	Nodular or Fragmental	<50% cemented gravel or cobble size nodules or fragments within soil (described as soil)

Carbonate Soils and Rocks

Rocks and soils with less than approximately 50% carbonate content as indicated by weak or sporadic effervescence in the presence of 10% HCl solution are prefixed 'Calcareous'.

Soils with >50% carbonate are prefixed 'Carbonate'.

Sedimentary Rocks comprising 90% or more carbonate are described using the appropriate rock type name (see rock description). Where carbonate content is 50% to <90%, the rock type is prefixed by 'IMPURE'.

Rock Core Indices

Total core recovery (TCR) and rock quality designation (RQD) are calculated over the length of a core run as defined in AS1726-2017. Solid core recovery (SCR) is calculated similarly to RQD but includes full width pieces less than 100mm long.

Field Sampling and Testing Abbreviations

Symbol	Description
V	Uncorrected Borehole Vane Shear (kPa) – Peak/Residual
HV	Uncorrected Hand Vane Shear (kPa) – Peak/Residual
PP	Pocket Penetrometer (kPa)
SPT	Standard Penetration Test
N	Uncorrected SPT blow count for 300 mm
N*	SPT with sample collected
RW	SPT rod weight only (SPT N < 1)
HW	SPT rod and hammer weight (SPT N < 1)
HB	SPT Hammer Bouncing
FPM	Field Permeability
Lu	Lugeon/Packer Test (L/m/min)
$Is_{(50)}$(A)	Axial Point Load Strength Index (MPa)
$Is_{(50)}$(D)	Diametral Point Load Strength Index (MPa)
$Is_{(50)}$(I)	Irregular Point Load Strength Index (MPa)
U(X)	Undisturbed Sample (X) mm diameter
DS	Disturbed Sample

Symbol	Description
BS	Bulk Sample
ES	Environmental Sample
RQD	Rock Quality Designation (%)
SCR	Solid Core Recovery (%)
TCR	Total Core Recovery (%)
DCP	Dynamic Cone Penetration Resistance (blows/100 mm)
PID	Photoionization Detector

Water

Symbol	Description
	Water level (static)
	Water level (during drilling)
	Water inflow
	Water outflow
	Complete water loss

Drilling Method

Drilling Method Symbol	Description
ADV	Auger Drilling – V-Bit (100mm)
AS	Auger Screwing
B	Blank Bit*
CA	Casing Advancer
DP	Geoprobe Continuous Sampling
DT	Diatube (114mm)
HA	Hand Auger
NDD	Non-Destructive Drilling
NMLC	NMLC Size Core – Triple Tube (50mm diameter)
NQ, HQ, PQ	Wireline Size Core – Double Tube (48mm, 64mm, 85mm diameter)
NQ3, HQ3, PQ3	Wireline Size Core – Triple Tube (45mm, 61mm, 83mm diameter)
RR	Rock Roller/Tricone
SNC	Sonic Coring
T	Tungsten Carbide Bit*
VC	Vibro Coring
WB	Wash Boring

*Drill bit symbol used as suffix to drilling method symbol, e.g. ADV indicates auger drilling with V-bit

Drilling Support

Symbol	Description
U	Unsupported
C	Casing Unspecified
NW, HW, PW	Casing (92mm, 118mm, 144mm diameter)
SNC 3x4	Sonic Casing (121mm diameter)
SNC 4x6	Sonic Casing (152mm diameter)
SNC 6x7	Sonic Casing (178mm diameter)
M	Mud Support

Excavation Penetration Resistance

Symbol	Description
VE	Very Easy
E	Easy
F	Firm
H	Hard
VH	Very Hard

AECOM **Engineering Log**

BOREHOLE No. **BH001**

Sheet: 1 of 1

Client:	AGL	**Project No:**	60619153	**Start Date:**	13/01/2021
Project:	AGL BESS	**Logged by:**	MX	**End Date:**	13/01/2021
Location:	Broken Hill, Western corner of Site	**Checked by:**	MC	**Location Meth.:**	Map
Driller:	Numac	**Hole Diameter:**	125-250 mm	**Easting:**	539910 m
Drill Rig:	Geoprobe 7822	**Inclination:**	-90°	**Northing:**	6461025 m
		Bearing:	N/A	**Hor. Proj/Dat:**	MGA94/GDA94-56M
				RL:	284 m
				Ver. Datum:	AHD
				Surface:	Clayey Silt

Field Data								Material Description			Soil Condition		Comments
Method	Support	Ground Water	DCP (blows per 60mm)	Field Tests	Samples	Reduced Level (m)	Depth (m)	Graphic Log	Classification Symbol	MATERIAL NAME: plasticity/particle characteristics, colour, secondary and other minor components, structure	Moisture Condition	Density / Consistency	Additional Observations (Geological Unit)
HA	None	NOT ENCOUNTERED	20 /60mm	PID=1.2	ES_0.0-0.1				ML	clayey SILT: low plasticity; red-brown; with gravel, fine to coarse, sub-rounded to sub-angular; no odour & no sheen	D	H	ALLUVIAL SOIL 0.00m: DCP attempted 3 times, all refused within top 100 mm
AD/V					BS_0.5-1.3	283.0	0.5 1.0						
AH						282.0	1.5 2.0			GNEISS: highly to moderately weathered, medium to high strength, pale brown-grey			WEATHERED ROCK 1.30m: V-bit auger refusal
						281.0	2.5 3.0			GNEISS: slightly weathered, high strength, pale grey			BEDROCK
					DS_3.8-4.0	280.0	3.5 4.0			from 4.20 m: occasional mica deposits			
					DS_4.8-5.0	279.0	4.5 5.0			*BH001 terminated at 5.00 m.* *Terminated as no groundwater encountered*			
						278.0	5.5						
						277.0	6.0 6.5						
						276.0	7.0 7.5						
							8.0						

2019_ANZ_BOREHOLE 60619153_AGL BESS_BROKEN HILL.GPJ AECOM_5-00AA.GLB 9.2.2021

Engineering log should be read in conjunction with AECOM soil and rock description sheets.

AECOM **Engineering Log**

BOREHOLE No. **BH002**

Sheet: 1 of 1

Client:	AGL	**Project No:**	60619153	**Start Date:**	12/01/2021
Project:	AGL BESS	**Logged by:**	MX	**End Date:**	12/01/2021
Location:	Broken Hill, Northern corner of Site	**Checked by:**	MC	**Location Meth.:**	Map
Driller:	Numac	**Hole Diameter:**	250 mm	**Easting:**	539972 m
Drill Rig:	Geoprobe 7822	**Inclination:**	-90°	**Northing:**	6461049 m
		Bearing:	N/A	**Hor. Proj/Dat:**	MGA94/GDA94-56M
				RL:	284 m
				Ver. Datum:	AHD
				Surface:	Clayey Silt

Field Data									Material Description		Soil Condition		Comments
Method	Support	Ground Water	DCP (blows per 100mm)	Field Tests	Samples	Reduced Level (m)	Depth (m)	Graphic Log	Classification Symbol	MATERIAL NAME: plasticity/particle characteristics, colour, secondary and other minor components, structure	Moisture Condition	Density / Consistency	Additional Observations (Geological Unit)
HA	None	NOT ENCOUNTERED	12 7 8		ES_0.0-0.3 DS_0.1-0.2	284.0			ML	clayey SILT: low plasticity; red-brown; trace gravel, fine to coarse, sub-rounded to sub-angular; trace sand, fine grained; no odour & no sheen	D	VSt-H	ALLUVIAL SOIL
AD/V			12 18 10 /20mm		BS_0.4-0.9		0.5		ML	gravelly clayey SILT: low plasticity; pale grey; gravel is fine to medium, sub-rounded to sub-angular; no odour & no sheen		H	POSSIBLY RESIDUAL SOIL
						283.0	1.0			*BH002 terminated at 0.90 m.* *AD/V refusal*			
						282.0	2.0						
						281.0	3.0						
						280.0	4.0						
						279.0	5.0						
						278.0	6.0						
						277.0	7.0						
							8.0						

2019_ANZ_BOREHOLE 60619153_AGL BESS_BROKEN HILL.GPJ AECOM_5-00AA.GLB 9.2.2021

Engineering log should be read in conjunction with AECOM soil and rock description sheets.

AECOM **Engineering Log**

BOREHOLE No. **BH003**

Sheet: 1 of 1

Client:	AGL	**Project No:**	60619153	**Start Date:**	12/01/2021
Project:	AGL BESS	**Logged by:**	MX	**End Date:**	12/01/2021
Location:	Broken Hill, middle South-Western boundary of Site	**Checked by:**	MC	**Location Meth.:**	Map
Driller:	Numac	**Hole Diameter:**	250 mm	**Easting:**	539931 m
Drill Rig:	Geoprobe 7822	**Inclination:**	-90°	**Northing:**	6460990 m
		Bearing:	N/A	**Hor. Proj/Dat:**	MGA94/GDA94-56M
				RL:	283 m
				Ver. Datum:	AHD
				Surface:	Clayey Silt

Field Data								Material Description		Soil Condition		Comments
Method	Support	Ground Water	DCP (blows per 100mm)	Field Tests	Samples	Reduced Level (m)	Depth (m)	Graphic Log	Classification Symbol	MATERIAL NAME: plasticity/particle characteristics, colour, secondary and other minor components, structure	Moisture Condition	Density / Consistency	Additional Observations (Geological Unit)
HA	None	NOT ENCOUNTERED	7 6 5 5 5 8 10 7 7		ES_0.0-0.1 DS_0.3-0.4 ES_0.5-0.6 ES_0.7-0.8	283.0	0.5		ML	clayey SILT: low plasticity; red-brown; trace sand, fine to coarse; trace gravel, fine to coarse, sub-rounded to sub-angular; no odour & no sheen	D	VSt-H	ALLUVIAL SOIL
AD/V			12 14 10 9 11 10 20 20		BS_0.8-1.5 BS_1.5-2.2 DS_2.6-2.7	282.0 281.0	1.0 1.5 2.0 2.5		ML	gravelly clayey SILT: low plasticity; pale red-brown and pale grey; gravel is fine to coarse, sub-rounded to sub-angular; no odour & no sheen		H	POSSIBLY RESIDUAL SOIL
										GNEISS: extremely weathered, soil to very low strength; recovered as silty SAND: fine to medium grained, pale grey; with gravel, fine to medium, sub-rounded to sub-angular			WEATHERED ROCK
						280.0 279.0 278.0 277.0 276.0	3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0			*BH003 terminated at 2.80 m.* *AD/V refusal*			

2019_ANZ_BOREHOLE 60619153_AGL BESS_BROKEN HILL.GPJ AECOM_5-00AA.GLB 9.2.2021

Engineering log should be read in conjunction with AECOM soil and rock description sheets.

AECOM Engineering Log

BOREHOLE No. **BH004**

Sheet: 1 of 1

Client:	AGL	**Project No:**	60619153	**Start Date:**	12/01/2021
Project:	AGL BESS	**Logged by:**	MX	**End Date:**	12/01/2021
Location:	Broken Hill, middle of Site	**Checked by:**	MC	**Location Meth.:**	Map
Driller:	Numac	**Hole Diameter:**	250 mm	**Easting:**	539968 m
Drill Rig:	Geoprobe 7822	**Inclination:**	-90°	**Northing:**	6460994 m
		Bearing:	N/A	**Hor. Proj/Dat:**	MGA94/GDA94-56M
				RL:	283 m
				Ver. Datum:	AHD
				Surface:	Clayey Silt

Field Data								Material Description		Soil Condition		Comments
Method	Support	Ground Water	DCP (blows per 100mm)	Field Tests	Samples	Reduced Level (m)	Depth (m)	Graphic Log	Classification Symbol	MATERIAL NAME: plasticity/particle characteristics, colour, secondary and other minor components, structure	Moisture Condition	Density / Consistency	Additional Observations (Geological Unit)
HA	None	NOT ENCOUNTERED	13 9 10		ES_0.0-0.3 DS_0.2-0.3	283.0	0		ML	clayey SILT: low plasticity; red-brown; trace gravel, fine to medium, sub-rounded to sub-angular; trace sand, fine to coarse; no odour & no sheen	D	H	ALLUVIAL SOIL 0.00-0.30m: QC100
AD/V			9 13 11 11 11 13 13 11				0.5 1.0					
			9 9 8 9		BS_1.0-1.5	282.0	1.5					
			13 11 20 16 13 15 11 16 21 18				2.0 2.5					
			16 17 10 /30mm		DS_3.0-3.2	281.0 280.0	3.0		CL	silty CLAY: low plasticity; grey and red-brown; trace gravel, fine to medium, sub-rounded to sub-angular; no odour & no sheen	M		POSSIBLY RESIDUAL SOIL
							3.5 4.0			*BH004 terminated at 3.20 m.* *AD/V refusal*			
						279.0	4.5 5.0						
						278.0	5.5 6.0						
						277.0	6.5 7.0						
						276.0	7.5 8.0						

2019_ANZ_BOREHOLE 60619153_AGL BESS_BROKEN HILL.GPJ AECOM_5-00AA.GLB 9.2.2021

Engineering log should be read in conjunction with AECOM soil and rock description sheets.

AECOM Engineering Log

BOREHOLE No. BH005

Sheet: 1 of 1

Client: AGL		**Project No:** 60619153		**Start Date:**	13/01/2021
Project: AGL BESS		**Logged by:** MX		**End Date:**	13/01/2021
Location: Broken Hill, Southern corner of Site		**Checked by:** MC		**Location Meth.:**	Map
Driller: Numac	**Hole Diameter:** 125-250 mm	**Easting:** 539947 m		**RL:**	283 m
Drill Rig: Geoprobe 7822	**Inclination:** -90°	**Northing:** 6460959 m		**Ver. Datum:**	AHD
	Bearing: N/A	**Hor. Proj/Dat:** MGA94/GDA94-56M		**Surface:**	Clayey Silt

Field Data									Material Description			Soil Condition		Comments
Method	Support	Ground Water	DCP (blows per 100mm)	Field Tests	Samples	Reduced Level (m)	Depth (m)	Graphic Log	Classification Symbol	MATERIAL NAME: plasticity/particle characteristics, colour, secondary and other minor components, structure		Moisture Condition	Density / Consistency	Additional Observations (Geological Unit)
HA	None		16 19 14 10	PID=1.6	ES_0.0-0.1				ML	clayey SILT: low plasticity; red-brown; trace gravel, fine to medium, sub-rounded to sub-angular; trace sand, fine to coarse grained; no odour & no sheen		M	H	ALLUVIAL SOIL
AD/V			10 13 13 13 12 20 /75mm	PID=1.1	DS_0.4-0.5 ES_0.4-0.5 BS_0.5-1.4	282.0 281.0 280.0 279.0 278.0 277.0 276.0 275.0	0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0 6.5 7.0 7.5 8.0			from 0.50 m: with gravel, fine to medium, sub-rounded to sub-angular				0.40-0.50m: QC200
AH		NOT ENCOUNTERED			DS_3.8-4.0					GNEISS: extremely weathered, soil strength, pale grey				WEATHERED ROCK 1.40m: V-bit auger refusal
										from 2.00 m: rare mica deposits				3.00-3.50m: No air hammer return
										GNEISS: slightly weathered, high strength, pale grey				BEDROCK
										BH005 terminated at 8.00 m. *Terminated as no groundwater encountered*				

2019_ANZ_BOREHOLE 60619153_AGL BESS_BROKEN HILL.GPJ AECOM_5-00AA.GLB 9.2.2021

Engineering log should be read in conjunction with AECOM soil and rock description sheets.

AECOM **Engineering Log**

BOREHOLE No. **BH006**

Sheet: 1 of 1

Client:	AGL	**Project No:**	60619153	**Start Date:**	14/01/2021
Project:	AGL BESS	**Logged by:**	MX	**End Date:**	14/01/2021
Location:	Broken Hill, Eastern corner of Site	**Checked by:**	MC	**Location Meth.:**	Map
Driller:	Numac	**Hole Diameter:**	125-250 mm	**Easting:**	540007 m
Drill Rig:	Geoprobe 7822	**Inclination:**	-90°	**Northing:**	6460986 m
		Bearing:	N/A	**Hor. Proj/Dat:**	MGA94/GDA94-56M
				RL:	283 m
				Ver. Datum:	AHD
				Surface:	Clayey Silt

Field Data									Material Description			Soil Condition		Comments
Method	Support	Ground Water	DCP (blows per 100mm)	Field Tests	Samples	Reduced Level (m)	Depth (m)	Graphic Log	Classification Symbol	MATERIAL NAME: plasticity/particle characteristics, colour, secondary and other minor components, structure		Moisture Condition	Density / Consistency	Additional Observations (Geological Unit)
HA	None	NOT ENCOUNTERED	8	PID=1.5	ES_0.0-0.1	283.0			ML	clayey SILT: low plasticity; red-brown; with gravel, fine to coarse, sub-rounded to sub-angular; no odour & no sheen		D	VSt-H	ALLUVIAL SOIL
			5											
			4	PID=1.1	DS_0.2-0.3									
			9		ES_0.2-0.3									
AD/V			12				0.5							
			12		BS_0.0-1.0									
			8											
			17											
			12											
			13				1.0							
			10			282.0				GNEISS: extremely weathered, soil strength, pale grey				WEATHERED ROCK
			10											1.00m: V-bit auger refusal
			10				1.5							
			11											
			20											
			20				2.0			GNEISS: slightly weathered, high strength, pale grey				BEDROCK
AH						281.0								
							2.5							
							3.0							
						280.0								
							3.5							
							4.0							
						279.0				*BH006 terminated at 4.00 m.* *Terminated as no groundwater encountered*				
							4.5							
						278.0	5.0							
							5.5							
							6.0							
						277.0								
							6.5							
							7.0							
						276.0								
							7.5							
							8.0							

2019_ANZ_BOREHOLE 60619153_AGL BESS_BROKEN HILL.GPJ AECOM_5-00AA.GLB 9.2.2021

Engineering log should be read in conjunction with AECOM soil and rock description sheets.

AECOM **Engineering Log**

BOREHOLE No. **Tank**

Sheet: 1 of 1

Client:	AGL	**Project No:**	60619153	**Start Date:**	14/01/2021
Project:	AGL BESS	**Logged by:**	MX	**End Date:**	14/01/2021
Location:	Broken Hill, Southern corner of Site	**Checked by:**	MC	**Location Meth.:**	Map
Driller:	Numac	**Hole Diameter:**	300 mm	**Easting:**	539957 m
Drill Rig:	Shovel	**Inclination:**	-90°	**Northing:**	6460947 m
		Bearing:	N/A	**Hor. Proj/Dat:**	MGA94/GDA94-56M
				RL:	283 m
				Ver. Datum:	AHD
				Surface:	Clayey Silt

Field Data							Material Description			Soil Condition		Comments
Method	Support	Ground Water	Field Tests	Samples	Reduced Level (m)	Depth (m)	Graphic Log	Classification Symbol	MATERIAL NAME: plasticity/particle characteristics, colour, secondary and other minor components, structure	Moisture Condition	Density / Consistency	Additional Observations (Geological Unit)
Shovel	None	NOT ENCOUNTERED		ES_0.0-0.1 ES_0.1-0.2 ES_0.2-0.3 ES_0.3-0.4	282.0	0.5		ML	clayey SILT: low plasticity; red-brown; black staining, sheen present, hydrocarbon odour from 0.30 m: lightly stained black, clear sheen *Tank terminated at 0.40 m.* *Target depth*	D		ALLUVIAL SOIL
					281.0	1.5						
					280.0	2.5						
					279.0	3.5						
					278.0	4.5						
					277.0	5.5						
					276.0	6.5						
					275.0	7.5						
						8.0						

2019_ANZ_BOREHOLE 60619153_AGL BESS_BROKEN HILL.GPJ AECOM_5-00AA.GLB 9.2.2021

Engineering log should be read in conjunction with AECOM soil and rock description sheets.

Appendix F

Calibration Certificates

Calibration & Service Report
Gas Monitor

Company:	Active Environmental Solutions Hire	**Manufacturer:**	RAE Systems	**Serial #:**	592-901218
Contact:	Aleks Todorovic	**Instrument:**	MiniRAE 3000	**Asset #:**	-
Address:	2 Merchant Avenue Thomastown Vic 3074	**Model:**	PGM 7320	**Part #:**	-
		Configuration:	VOC	**Sold:**	-
Phone:	03 9464 2300 | **Fax**: 03 9464 3421	**Wireless:**	-	**Last Cal:**	-
Email:	Hire@aesolutions.com.au	**Network ID:**	-	**Job #:**	-
		Unit ID:	-	**Cal Spec:**	Std

Item	Test	Pass/Fail	Comments
Battery	Li Ion	✓	
Charger	Charger, Power supply	✓	
	Cradle	✓	
Pump	Flow	✓	>500 mL/min
Filter	Filter, fitting, etc	✓	
Alarms	Audible, visual, vibration	✓	
Display	Operation	✓	
PCB	Operation	✓	
Connectors	Condition	✓	
Firmware	Version	✓	2.16
Datalogger	Operation	✓	
Monitor Housing	Condition	✓	
Case	Condition/Type	✓	
Sensors			
Oxygen		-	
LEL		-	
PID	10.6eV	✓	
Toxic 1		-	
Toxic 2		-	
Toxic 3		-	
Toxic 4		-	
Toxic 5		-	

Engineer's Report

Setup, service and calibration for hire

Calibration Certificate

Sensor	Type	Serial No:	Span Gas	Concentration	Traceability Lot #	CF	Reading	
							Zero	Span
Oxygen								
LEL								
PID	10.6eV	2R003225	Isobutylene	100 PPM	3075-2-1	1	0	100.0 PPM
Toxic 1								
Toxic 2								
Toxic 3								
Toxic 4								
Toxic 5								

Calibrated/Repaired by: Milenko Sisic

Date: 06/01/2021 Next due: 06/07/2021

Appendix G

Laboratory Reports

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2101586**	Page	: 1 of 27
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: KATE HOLT	Contact	: Brenda Hong
Address	: LEVEL 21 420 GEORGE STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 60619153/2g	Date Samples Received	: 15-Jan-2021 18:20
Order number	: 60619153/2g	Date Analysis Commenced	: 19-Jan-2021
C-O-C number	: ----	Issue Date	: 22-Jan-2021 17:47
Sampler	: Pankti Dalal		
Site	: AGL BLESS BH		
Quote number	: EN/004/20		
No. of samples received	: 22		
No. of samples analysed	: 22		

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
Ashesh Patel	Senior 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

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.
- 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.
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene 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.
- EG020: Copper and Zinc results for samples ES2101586-#002 confirmed by re-digestion and reanalysis.
- **EA200 Legend**
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- 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.
- 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 '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: 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.
- EA200: N/A - Not Applicable

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC100_200112	QC400_200114 TB	QC500_200114 TS	Tank_0.0-0.1	Tank_0.1-0.2
			Sampling date / time	12-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-004	ES2101586-005	ES2101586-006	ES2101586-008	ES2101586-009
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	----	----	----	8.2	8.3
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	17.2	----	----	2.3	22.8
ED006: Exchangeable Cations on Alkaline Soils								
Exchangeable Calcium	----	0.2	meq/100g	----	----	----	3.1	7.0
Exchangeable Magnesium	----	0.2	meq/100g	----	----	----	0.5	2.4
Exchangeable Potassium	----	0.2	meq/100g	----	----	----	<0.2	0.6
Exchangeable Sodium	----	0.2	meq/100g	----	----	----	0.6	1.3
Cation Exchange Capacity	----	0.2	meq/100g	----	----	----	4.3	11.2
Exchangeable Sodium Percent	----	0.2	%	----	----	----	14.9	11.7
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	5	----	----	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	----	----	<1	<1
Chromium	7440-47-3	2	mg/kg	16	----	----	12	12
Copper	7440-50-8	5	mg/kg	17	----	----	16	14
Lead	7439-92-1	5	mg/kg	9	----	----	50	13
Nickel	7440-02-0	2	mg/kg	12	----	----	9	9
Zinc	7440-66-6	5	mg/kg	30	----	----	345	48
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	----	----	<0.5	<0.5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	----	----	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	----	----	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	----	----	<5	<5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100_200112	QC400_200114 TB	QC500_200114 TS	Tank_0.0-0.1	Tank_0.1-0.2
				Sampling date / time	12-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2101586-004	ES2101586-005	ES2101586-006	ES2101586-008	ES2101586-009
					Result	Result	Result	Result	Result
EP074B: Oxygenated Compounds - Continued									
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	----	----	<5	<5
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	----	----	<5	<5
Chloromethane	74-87-3	5	mg/kg		<5	----	----	<5	<5
Vinyl chloride	75-01-4	5	mg/kg		<5	----	----	<5	<5
Bromomethane	74-83-9	5	mg/kg		<5	----	----	<5	<5
Chloroethane	75-00-3	5	mg/kg		<5	----	----	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	----	----	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100_200112	QC400_200114 TB	QC500_200114 TS	Tank_0.0-0.1	Tank_0.1-0.2
				Sampling date / time	12-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2101586-004	ES2101586-005	ES2101586-006	ES2101586-008	ES2101586-009
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	----	----	<1	<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	----	----	**1.6**	**0.5**
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100_200112	QC400_200114 TB	QC500_200114 TS	Tank_0.0-0.1	Tank_0.1-0.2
				Sampling date / time	12-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2101586-004	ES2101586-005	ES2101586-006	ES2101586-008	ES2101586-009
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	----	----	**2.1**	**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	**73**	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	**270**	**440**
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	**40400**	**13200**
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	**30600**	**9130**
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	**71300**	**22800**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	**88**	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	**39**	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	**1240**	**1320**
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	**63600**	**19600**
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	**12500**	**3580**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	**77300**	**24500**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	**1240**	**1320**
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	**0.4**	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	**21.3**	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	**3.3**	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	**16.7**	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	**7.0**	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	**48.7**	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	**23.7**	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP074S: VOC Surrogates									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	QC100_200112	QC400_200114 TB	QC500_200114 TS	Tank_0.0-0.1	Tank_0.1-0.2
				Sampling date / time	12-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2101586-004	ES2101586-005	ES2101586-006	ES2101586-008	ES2101586-009
					Result	Result	Result	Result	Result
EP074S: VOC Surrogates - Continued									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		84.3	----	----	110	104
Toluene-D8	2037-26-5	0.5	%		87.9	----	----	112	108
4-Bromofluorobenzene	460-00-4	0.5	%		83.9	----	----	102	99.1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		97.2	----	----	95.4	90.3
2-Chlorophenol-D4	93951-73-6	0.5	%		94.7	----	----	90.1	84.6
2.4.6-Tribromophenol	118-79-6	0.5	%		79.3	----	----	90.0	86.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		96.2	----	----	99.8	91.6
Anthracene-d10	1719-06-8	0.5	%		92.5	----	----	87.0	96.5
4-Terphenyl-d14	1718-51-0	0.5	%		77.1	----	----	96.2	121
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		84.0	111	101	115	108
Toluene-D8	2037-26-5	0.2	%		83.4	108	102	109	104
4-Bromofluorobenzene	460-00-4	0.2	%		86.6	115	104	112	110

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Tank_0.2-0.3	Tank_0.3-0.4	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8
			Sampling date / time	14-Jan-2021 00:00	14-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-010	ES2101586-011	ES2101586-012	ES2101586-013	ES2101586-014
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	8.3	8.2	8.4	8.7	8.6
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	10.8	15.6	8.0	14.8	12.1
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	----	----	50.9	----	----
APPROVED IDENTIFIER:	----	-	--	----	----	B.SCHRADER	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	----	----	No	----	----
Organic Fibre	----	0.1	g/kg	----	----	No	----	----
ED006: Exchangeable Cations on Alkaline Soils								
Exchangeable Calcium	----	0.2	meq/100g	7.6	10.5	6.7	8.8	8.3
Exchangeable Magnesium	----	0.2	meq/100g	2.8	2.6	<0.2	3.3	2.8
Exchangeable Potassium	----	0.2	meq/100g	0.6	<0.2	0.5	<0.2	<0.2
Exchangeable Sodium	----	0.2	meq/100g	1.7	2.4	<0.2	1.1	0.8
Cation Exchange Capacity	----	0.2	meq/100g	12.7	15.6	7.2	13.2	11.9
Exchangeable Sodium Percent	----	0.2	%	13.4	15.2	<0.2	8.3	6.6
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	6	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	14	10	12	11	13
Copper	7440-50-8	5	mg/kg	18	12	15	14	16
Lead	7439-92-1	5	mg/kg	11	8	13	6	12
Nickel	7440-02-0	2	mg/kg	11	8	9	8	10
Zinc	7440-66-6	5	mg/kg	53	38	35	22	36
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Tank_0.2-0.3	Tank_0.3-0.4	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8
			Sampling date / time	14-Jan-2021 00:00	14-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-010	ES2101586-011	ES2101586-012	ES2101586-013	ES2101586-014
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	<5
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Tank_0.2-0.3	Tank_0.3-0.4	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8
			Sampling date / time	14-Jan-2021 00:00	14-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-010	ES2101586-011	ES2101586-012	ES2101586-013	ES2101586-014
				Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued								
Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074G: Trihalomethanes								
Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074H: Naphthalene								
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Tank_0.2-0.3	Tank_0.3-0.4	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8
			Sampling date / time	14-Jan-2021 00:00	14-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-010	ES2101586-011	ES2101586-012	ES2101586-013	ES2101586-014
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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	**0.9**	<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
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	**0.9**	<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	**530**	**90**	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	**20300**	**3860**	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	**14800**	**2850**	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	**35600**	**6800**	<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	**1560**	**360**	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	**30900**	**5900**	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	**6230**	**1150**	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**38700**	**7410**	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	**1560**	**360**	<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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Tank_0.2-0.3	Tank_0.3-0.4	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8
			Sampling date / time	14-Jan-2021 00:00	14-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00	12-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-010	ES2101586-011	ES2101586-012	ES2101586-013	ES2101586-014
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
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
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.5	%	104	104	101	99.4	95.9
Toluene-D8	2037-26-5	0.5	%	109	110	107	106	100
4-Bromofluorobenzene	460-00-4	0.5	%	98.9	98.4	97.2	99.2	96.3
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	107	111	109	107	115
2-Chlorophenol-D4	93951-73-6	0.5	%	91.7	104	92.5	93.0	95.6
2.4.6-Tribromophenol	118-79-6	0.5	%	79.4	82.4	76.2	69.5	78.4
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	84.8	88.1	82.6	92.1	96.2
Anthracene-d10	1719-06-8	0.5	%	97.6	102	106	104	107
4-Terphenyl-d14	1718-51-0	0.5	%	126	96.4	88.7	84.5	89.0
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	109	108	106	103	100
Toluene-D8	2037-26-5	0.2	%	106	107	103	102	97.3
4-Bromofluorobenzene	460-00-4	0.2	%	109	111	110	111	109

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH002_0.0-0.3	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5	BH006_0.0-0.1
			Sampling date / time	12-Jan-2021 00:00	12-Jan-2021 00:00	13-Jan-2021 00:00	13-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-015	ES2101586-016	ES2101586-017	ES2101586-018	ES2101586-019
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	8.5	9.1	8.8	8.6	8.6
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	11.5	17.6	9.9	17.6	10.0
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	75.8	76.9	55.7	----	81.5
APPROVED IDENTIFIER:	----	-	--	B.SCHRADER	B.SCHRADER	B.SCHRADER	----	B.SCHRADER
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	12.0	11.2	6.4	8.5	5.9
Exchangeable Magnesium	----	0.2	meq/100g	0.6	1.9	0.9	2.4	1.2
Exchangeable Potassium	----	0.2	meq/100g	1.2	1.0	0.7	<0.2	0.5
Exchangeable Sodium	----	0.2	meq/100g	<0.2	0.6	<0.2	0.8	0.5
Cation Exchange Capacity	----	0.2	meq/100g	13.8	14.7	8.0	11.7	8.2
Exchangeable Sodium Percent	----	0.2	%	<0.2	3.8	<0.2	7.0	5.8
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	6	5	<5	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	17	16	12	11	10
Copper	7440-50-8	5	mg/kg	17	18	15	13	21
Lead	7439-92-1	5	mg/kg	15	10	82	6	30
Nickel	7440-02-0	2	mg/kg	12	12	9	9	11
Zinc	7440-66-6	5	mg/kg	37	32	190	21	62
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH002_0.0-0.3	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5	BH006_0.0-0.1
			Sampling date / time	12-Jan-2021 00:00	12-Jan-2021 00:00	13-Jan-2021 00:00	13-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-015	ES2101586-016	ES2101586-017	ES2101586-018	ES2101586-019
				Result	Result	Result	Result	Result
EP074A: Monocyclic Aromatic Hydrocarbons - Continued								
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	<5	<5	<5
2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	<5	<5	<5
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	<5	<5	<5
2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	<5	<5	<5
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074D: Fumigants								
2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	<5	<5	<5
Chloromethane	74-87-3	5	mg/kg	<5	<5	<5	<5	<5
Vinyl chloride	75-01-4	5	mg/kg	<5	<5	<5	<5	<5
Bromomethane	74-83-9	5	mg/kg	<5	<5	<5	<5	<5
Chloroethane	75-00-3	5	mg/kg	<5	<5	<5	<5	<5
Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	<5	<5	<5
1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH002_0.0-0.3	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5	BH006_0.0-0.1
				Sampling date / time	12-Jan-2021 00:00	12-Jan-2021 00:00	13-Jan-2021 00:00	13-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2101586-015	ES2101586-016	ES2101586-017	ES2101586-018	ES2101586-019
					Result	Result	Result	Result	Result
EP074E: Halogenated Aliphatic Compounds - Continued									
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH002_0.0-0.3	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5	BH006_0.0-0.1
			Sampling date / time	12-Jan-2021 00:00	12-Jan-2021 00:00	13-Jan-2021 00:00	13-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit	ES2101586-015	ES2101586-016	ES2101586-017	ES2101586-018	ES2101586-019
				Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
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
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH002_0.0-0.3	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5	BH006_0.0-0.1
				Sampling date / time	12-Jan-2021 00:00	12-Jan-2021 00:00	13-Jan-2021 00:00	13-Jan-2021 00:00	14-Jan-2021 00:00
Compound	CAS Number	LOR	Unit		ES2101586-015	ES2101586-016	ES2101586-017	ES2101586-018	ES2101586-019
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
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
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		97.3	98.7	78.1	95.6	100.0
Toluene-D8	2037-26-5	0.5	%		103	103	81.2	97.2	101
4-Bromofluorobenzene	460-00-4	0.5	%		97.2	97.1	83.1	92.6	94.0
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		112	112	107	104	100
2-Chlorophenol-D4	93951-73-6	0.5	%		100	100	94.5	92.4	92.0
2.4.6-Tribromophenol	118-79-6	0.5	%		82.0	80.9	75.5	70.1	72.9
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		99.5	92.2	90.4	88.1	88.9
Anthracene-d10	1719-06-8	0.5	%		109	104	96.7	99.8	100
4-Terphenyl-d14	1718-51-0	0.5	%		88.6	81.8	88.1	74.0	86.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		101	103	81.2	99.9	104
Toluene-D8	2037-26-5	0.2	%		100	99.5	78.1	94.0	97.6
4-Bromofluorobenzene	460-00-4	0.2	%		107	109	84.1	104	106

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH006_0.2-0.3	BH001_0.0-0.1	TSC	----	----
			Sampling date / time	14-Jan-2021 00:00	13-Jan-2021 00:00	11-Jan-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2101586-020	ES2101586-021	ES2101586-022	--------	--------
				Result	Result	Result	----	----
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	8.8	8.7	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.1	16.2	----	----	----
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	----	80.8	----	----	----
APPROVED IDENTIFIER:	----	-	--	----	B.SCHRADER	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg	----	No	----	----	----
Organic Fibre	----	0.1	g/kg	----	No	----	----	----
ED006: Exchangeable Cations on Alkaline Soils								
Exchangeable Calcium	----	0.2	meq/100g	5.3	8.0	----	----	----
Exchangeable Magnesium	----	0.2	meq/100g	1.2	0.6	----	----	----
Exchangeable Potassium	----	0.2	meq/100g	<0.2	0.4	----	----	----
Exchangeable Sodium	----	0.2	meq/100g	0.5	<0.2	----	----	----
Cation Exchange Capacity	----	0.2	meq/100g	7.0	9.0	----	----	----
Exchangeable Sodium Percent	----	0.2	%	7.8	<0.2	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	6	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	----	----
Chromium	7440-47-3	2	mg/kg	14	18	----	----	----
Copper	7440-50-8	5	mg/kg	27	21	----	----	----
Lead	7439-92-1	5	mg/kg	88	20	----	----	----
Nickel	7440-02-0	2	mg/kg	14	11	----	----	----
Zinc	7440-66-6	5	mg/kg	254	54	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	----	----	----
n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	----	----	----
1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	----	----	----
sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH006_0.2-0.3	BH001_0.0-0.1	TSC	----	----
				Sampling date / time	14-Jan-2021 00:00	13-Jan-2021 00:00	11-Jan-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2101586-020	ES2101586-021	ES2101586-022	--------	--------
					Result	Result	Result	----	----
EP074A: Monocyclic Aromatic Hydrocarbons - Continued									
1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg		<0.5	<0.5	----	----	----
tert-Butylbenzene	98-06-6	0.5	mg/kg		<0.5	<0.5	----	----	----
p-Isopropyltoluene	99-87-6	0.5	mg/kg		<0.5	<0.5	----	----	----
n-Butylbenzene	104-51-8	0.5	mg/kg		<0.5	<0.5	----	----	----
EP074B: Oxygenated Compounds									
Vinyl Acetate	108-05-4	5	mg/kg		<5	<5	----	----	----
2-Butanone (MEK)	78-93-3	5	mg/kg		<5	<5	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg		<5	<5	----	----	----
2-Hexanone (MBK)	591-78-6	5	mg/kg		<5	<5	----	----	----
EP074C: Sulfonated Compounds									
Carbon disulfide	75-15-0	0.5	mg/kg		<0.5	<0.5	----	----	----
EP074D: Fumigants									
2.2-Dichloropropane	594-20-7	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2-Dichloropropane	78-87-5	0.5	mg/kg		<0.5	<0.5	----	----	----
cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg		<0.5	<0.5	----	----	----
trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg		<0.5	<0.5	----	----	----
EP074E: Halogenated Aliphatic Compounds									
Dichlorodifluoromethane	75-71-8	5	mg/kg		<5	<5	----	----	----
Chloromethane	74-87-3	5	mg/kg		<5	<5	----	----	----
Vinyl chloride	75-01-4	5	mg/kg		<5	<5	----	----	----
Bromomethane	74-83-9	5	mg/kg		<5	<5	----	----	----
Chloroethane	75-00-3	5	mg/kg		<5	<5	----	----	----
Trichlorofluoromethane	75-69-4	5	mg/kg		<5	<5	----	----	----
1.1-Dichloroethene	75-35-4	0.5	mg/kg		<0.5	<0.5	----	----	----
Iodomethane	74-88-4	0.5	mg/kg		<0.5	<0.5	----	----	----
trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg		<0.5	<0.5	----	----	----
1.1-Dichloroethane	75-34-3	0.5	mg/kg		<0.5	<0.5	----	----	----
cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg		<0.5	<0.5	----	----	----
1.1.1-Trichloroethane	71-55-6	0.5	mg/kg		<0.5	<0.5	----	----	----
1.1-Dichloropropylene	563-58-6	0.5	mg/kg		<0.5	<0.5	----	----	----
Carbon Tetrachloride	56-23-5	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2-Dichloroethane	107-06-2	0.5	mg/kg		<0.5	<0.5	----	----	----
Trichloroethene	79-01-6	0.5	mg/kg		<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH006_0.2-0.3	BH001_0.0-0.1	TSC	----	----
				Sampling date / time	14-Jan-2021 00:00	13-Jan-2021 00:00	11-Jan-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2101586-020	ES2101586-021	ES2101586-022	--------	--------
					Result	Result	Result	----	----
EP074E: Halogenated Aliphatic Compounds - Continued									
Dibromomethane	74-95-3	0.5	mg/kg		<0.5	<0.5	----	----	----
1.1.2-Trichloroethane	79-00-5	0.5	mg/kg		<0.5	<0.5	----	----	----
1.3-Dichloropropane	142-28-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Tetrachloroethene	127-18-4	0.5	mg/kg		<0.5	<0.5	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg		<0.5	<0.5	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg		<0.5	<0.5	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg		<0.5	<0.5	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2.3-Trichloropropane	96-18-4	0.5	mg/kg		<0.5	<0.5	----	----	----
Pentachloroethane	76-01-7	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Hexachlorobutadiene	87-68-3	0.5	mg/kg		<0.5	<0.5	----	----	----
EP074F: Halogenated Aromatic Compounds									
Chlorobenzene	108-90-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Bromobenzene	108-86-1	0.5	mg/kg		<0.5	<0.5	----	----	----
2-Chlorotoluene	95-49-8	0.5	mg/kg		<0.5	<0.5	----	----	----
4-Chlorotoluene	106-43-4	0.5	mg/kg		<0.5	<0.5	----	----	----
1.3-Dichlorobenzene	541-73-1	0.5	mg/kg		<0.5	<0.5	----	----	----
1.4-Dichlorobenzene	106-46-7	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2-Dichlorobenzene	95-50-1	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg		<0.5	<0.5	----	----	----
1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg		<0.5	<0.5	----	----	----
EP074G: Trihalomethanes									
Chloroform	67-66-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Bromodichloromethane	75-27-4	0.5	mg/kg		<0.5	<0.5	----	----	----
Dibromochloromethane	124-48-1	0.5	mg/kg		<0.5	<0.5	----	----	----
Bromoform	75-25-2	0.5	mg/kg		<0.5	<0.5	----	----	----
EP074H: Naphthalene									
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH006_0.2-0.3	BH001_0.0-0.1	TSC	----	----
			Sampling date / time	14-Jan-2021 00:00	13-Jan-2021 00:00	11-Jan-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2101586-020	ES2101586-021	ES2101586-022	--------	--------
				Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	**77**	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	**92**	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	**42**	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	**0.4**	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	**22.4**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH006_0.2-0.3	BH001_0.0-0.1	TSC	----	----
			Sampling date / time	14-Jan-2021 00:00	13-Jan-2021 00:00	11-Jan-2021 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2101586-020	ES2101586-021	ES2101586-022	--------	--------
				Result	Result	Result	----	----
EP080: BTEXN - Continued								
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	**3.4**	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	**17.1**	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	**7.1**	----	----
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	<0.2	**50.4**	----	----
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	<0.5	**24.2**	----	----
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	----	----
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.5	%	**100**	**64.7**	----	----	----
Toluene-D8	2037-26-5	0.5	%	**103**	**92.1**	----	----	----
4-Bromofluorobenzene	460-00-4	0.5	%	**96.4**	**93.2**	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**94.2**	**100.0**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**87.2**	**104**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**70.9**	**65.2**	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**85.8**	**100**	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**96.9**	**97.0**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**79.3**	**97.1**	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**104**	**84.3**	**106**	----	----
Toluene-D8	2037-26-5	0.2	%	**100**	**90.8**	**104**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**107**	**96.1**	**104**	----	----

Analytical Results

Sub-Matrix: SOLID (Matrix: SOLID)				Sample ID	Fragment_200114_200114	----	----	----	----
				Sampling date / time	14-Jan-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2101586-007	--------	--------	--------	--------
					Result	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	----	----	----	----
Asbestos Type	1332-21-4	-	--		**-**	----	----	----	----
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	----	----	----	----
Sample weight (dry)	----	0.01	g		**57.6**	----	----	----	----
Synthetic Mineral Fibre	----	0.1	g/kg		**No**	----	----	----	----
Organic Fibre	----	0.1	g/kg		**Yes**	----	----	----	----
APPROVED IDENTIFIER:	----	-	--		**A. SMYLIE**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300_210112	QC301_210113	QC302_200114	----	----
				Sampling date / time	12-Jan-2021 00:00	13-Jan-2021 00:00	14-Jan-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2101586-001	ES2101586-002	ES2101586-003	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	**0.004**	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.018**	<0.005	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	<100	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	<100	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300_210112	QC301_210113	QC302_200114	----	----
				Sampling date / time	12-Jan-2021 00:00	13-Jan-2021 00:00	14-Jan-2021 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2101586-001	ES2101586-002	ES2101586-003	--------	--------
					Result	Result	Result	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**111**	**103**	**102**	**----**	**----**
Toluene-D8	2037-26-5	2	%		**104**	**105**	**102**	**----**	**----**
4-Bromofluorobenzene	460-00-4	2	%		**103**	**102**	**99.8**	**----**	**----**

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	BH003_0.0-0.1 - 12-Jan-2021 00:00	Mid-brown soil.
EA200: Description	BH002_0.0-0.3 - 12-Jan-2021 00:00	Mid-brown soil.
EA200: Description	BH004_0.0-0.3 - 12-Jan-2021 00:00	Mid-brown soil.
EA200: Description	BH005_0.0-0.1 - 13-Jan-2021 00:00	Mid-brown soil.
EA200: Description	BH006_0.0-0.1 - 14-Jan-2021 00:00	Mid-brown soil.
EA200: Description	BH001_0.0-0.1 - 13-Jan-2021 00:00	Mid-brown soil.

Sub-Matrix: **SOLID**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	Fragment_200114_200114 - 14-Jan-2021 00:00	A collection of cement sheeting.

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	64	130
Toluene-D8	2037-26-5	66	136
4-Bromofluorobenzene	460-00-4	60	122
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
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

Fraction Scheme : Legacy
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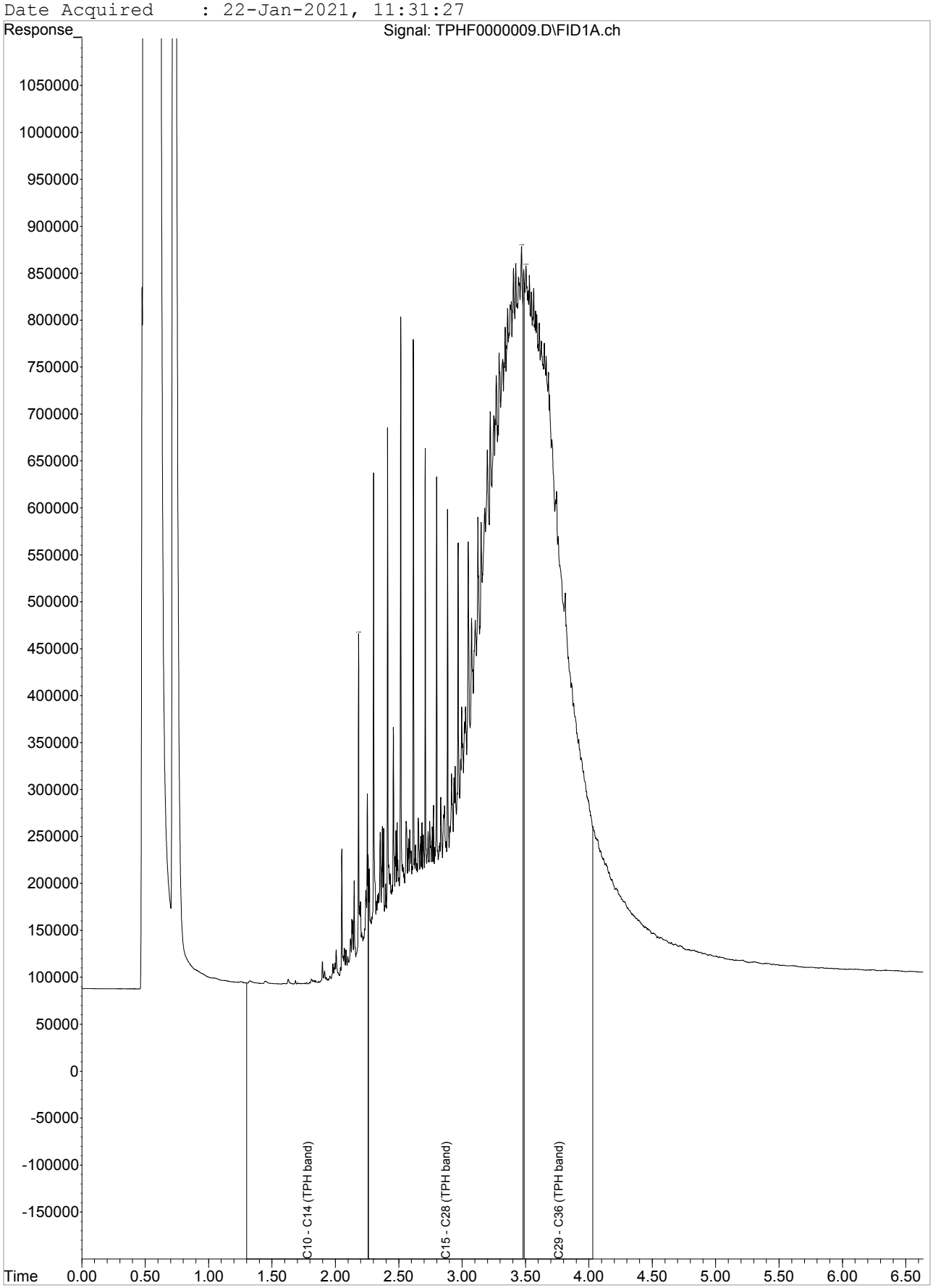
Laboratory Number: ES2101586-009
Sample ID : Tank_0.1-0.2
Date Acquired : 22-Jan-2021, 11:31:27



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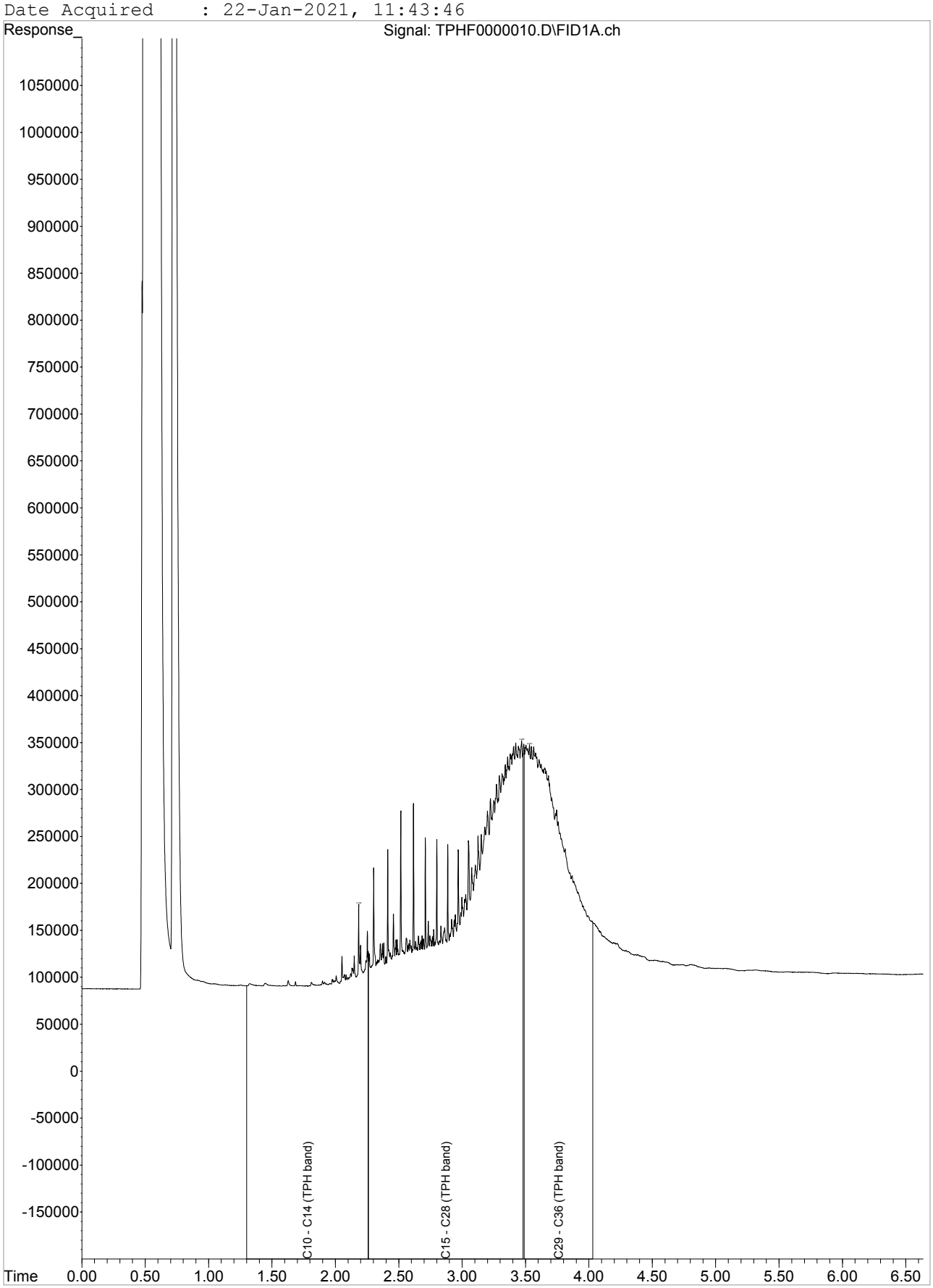
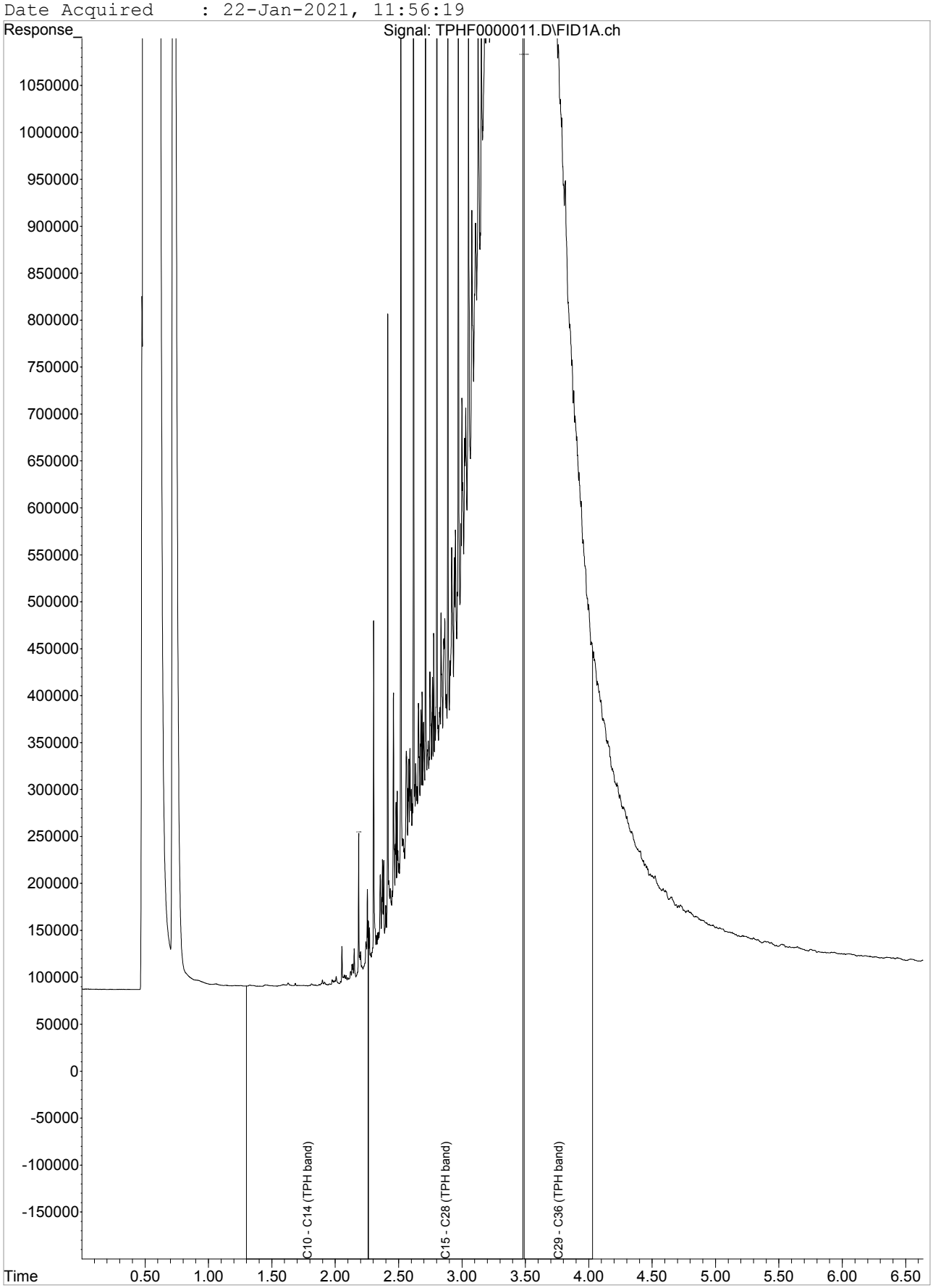
Laboratory Number: ES2101586-011
Sample ID : Tank_0.3-0.4
Date Acquired : 22-Jan-2021, 11:43:46



Fraction Scheme : Legacy
Data File : TPHF0000011.D
Laboratory Number: ES2101586-008
Sample ID : Tank_0.0-0.1
Date Acquired : 22-Jan-2021, 11:56:19



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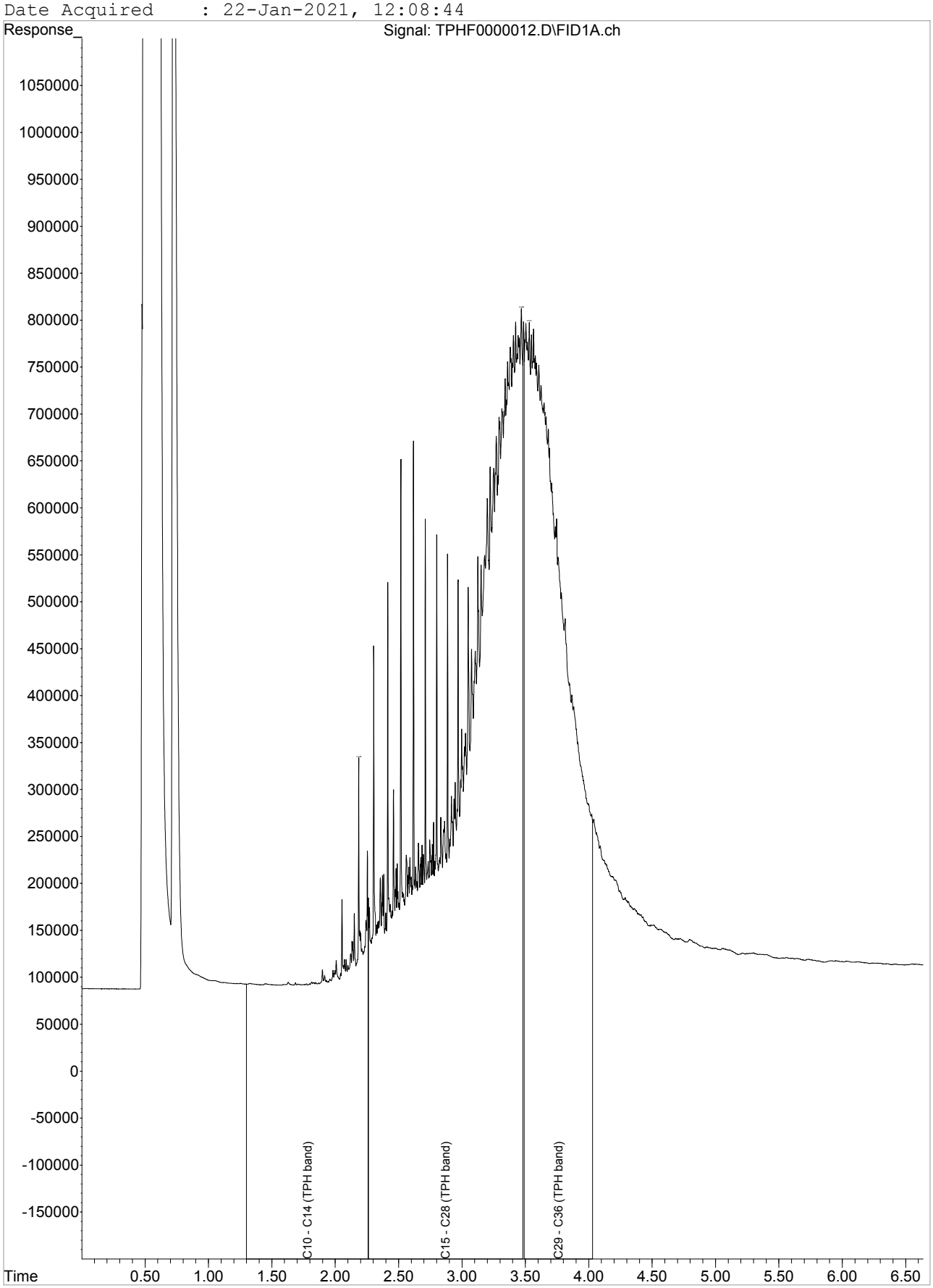
Laboratory Number: ES2101586-010
Sample ID : Tank_0.2-0.3
Date Acquired : 22-Jan-2021, 12:08:44



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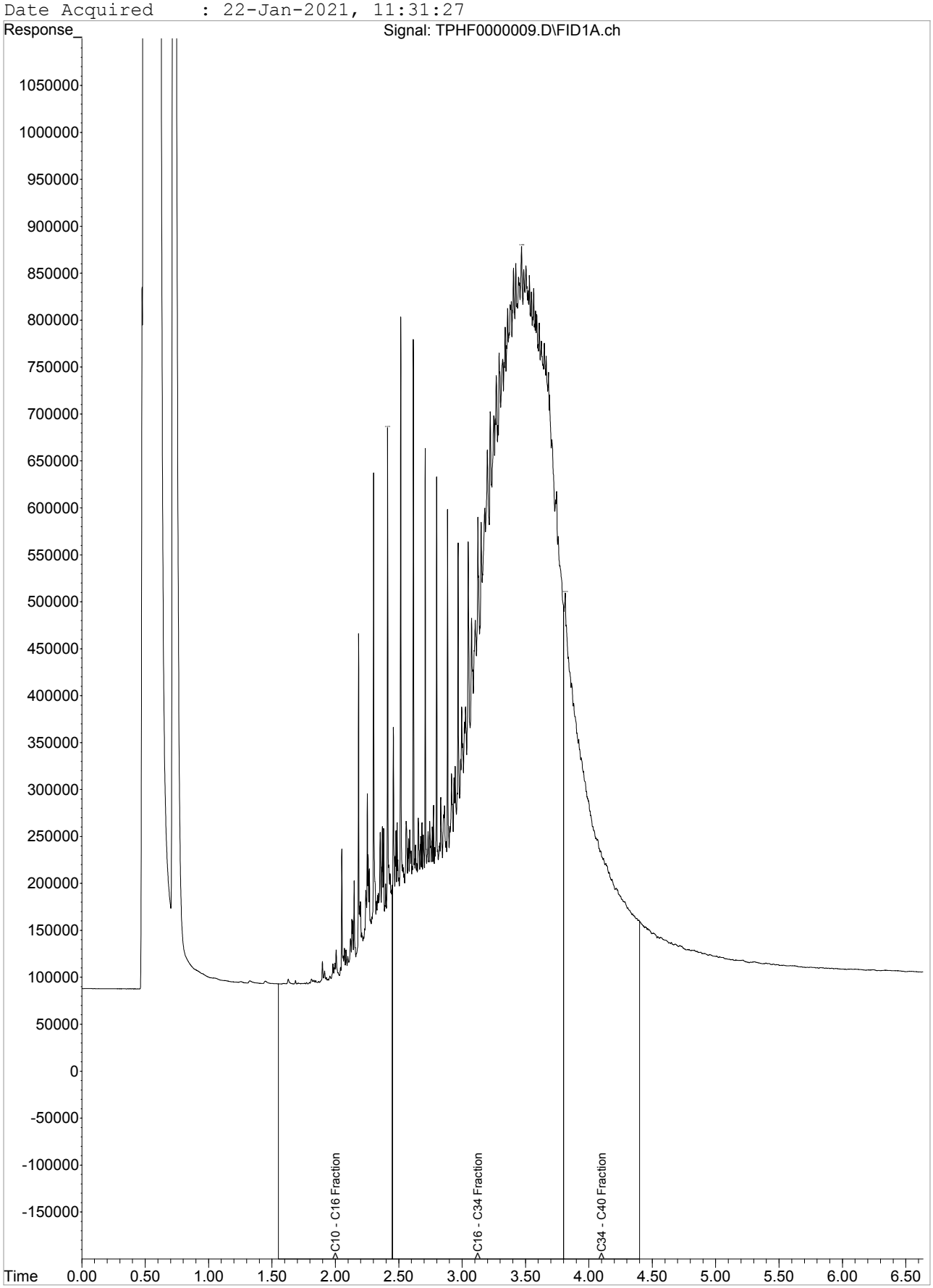
Laboratory Number: ES2101586-009
Sample ID : Tank_0.1-0.2
Date Acquired : 22-Jan-2021, 11:31:27



Fraction Scheme : NEPM
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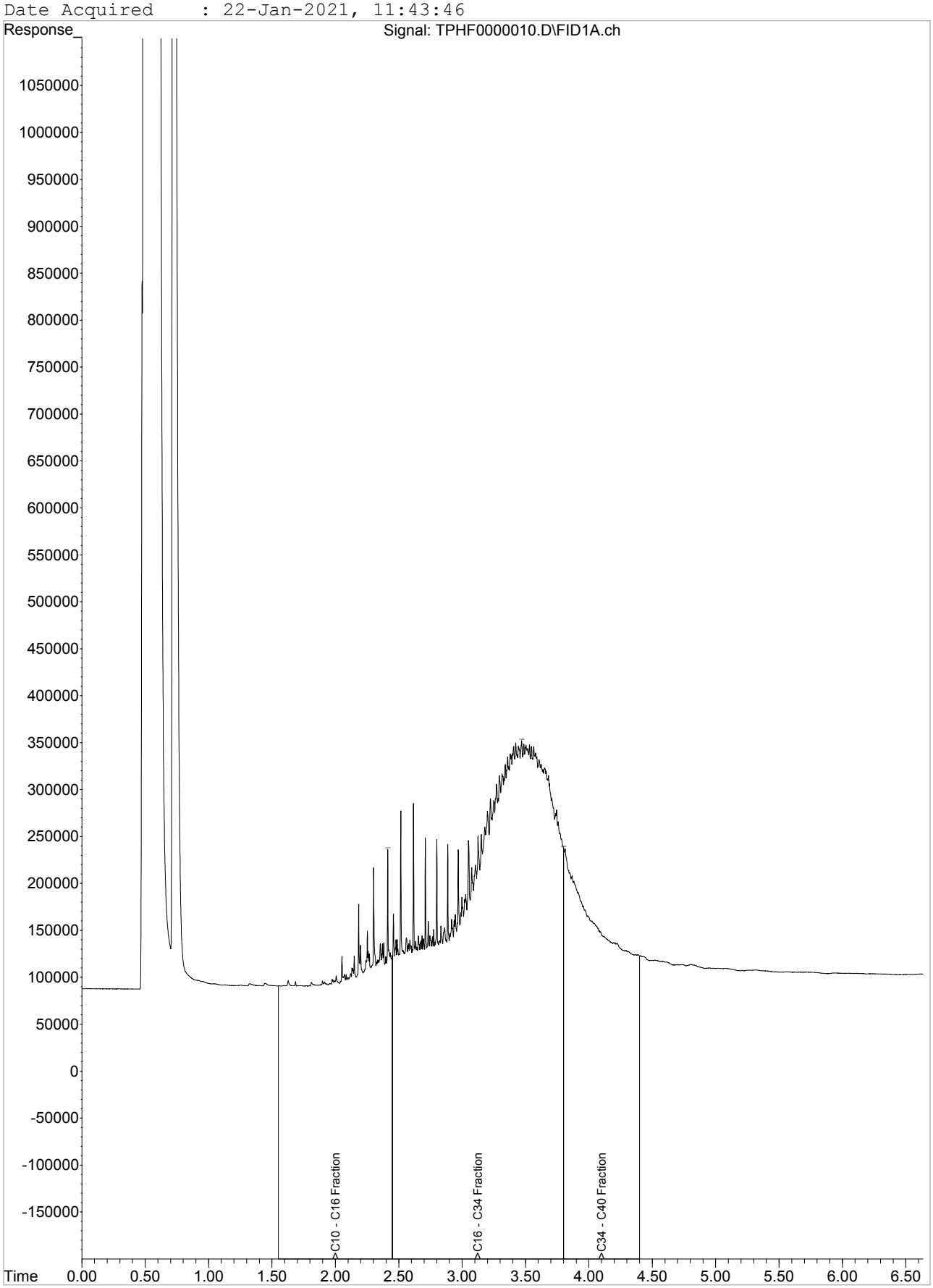
Laboratory Number: ES2101586-011
Sample ID : Tank_0.3-0.4
Date Acquired : 22-Jan-2021, 11:43:46



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Sample ID : Tank_0.0-0.1
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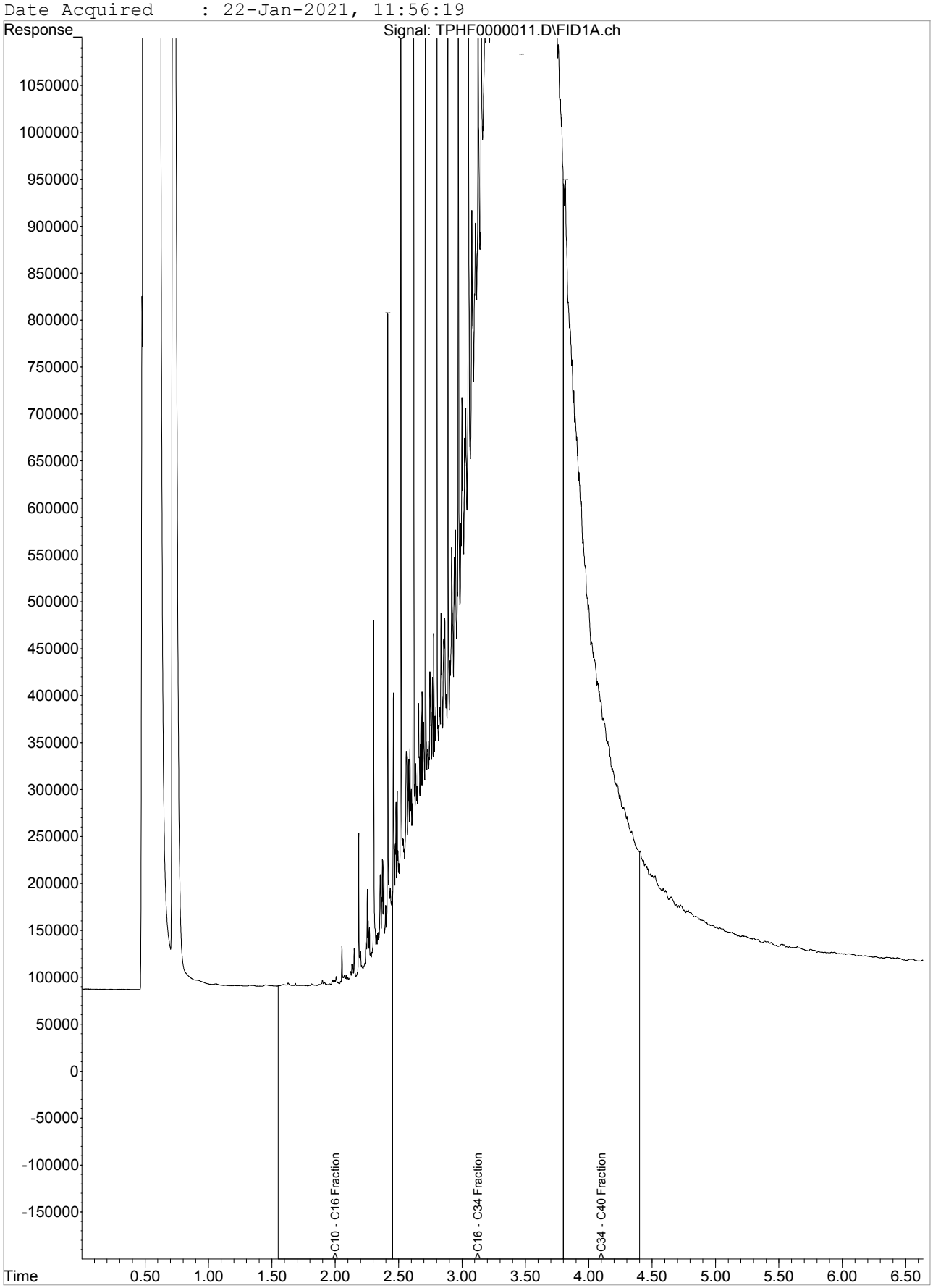

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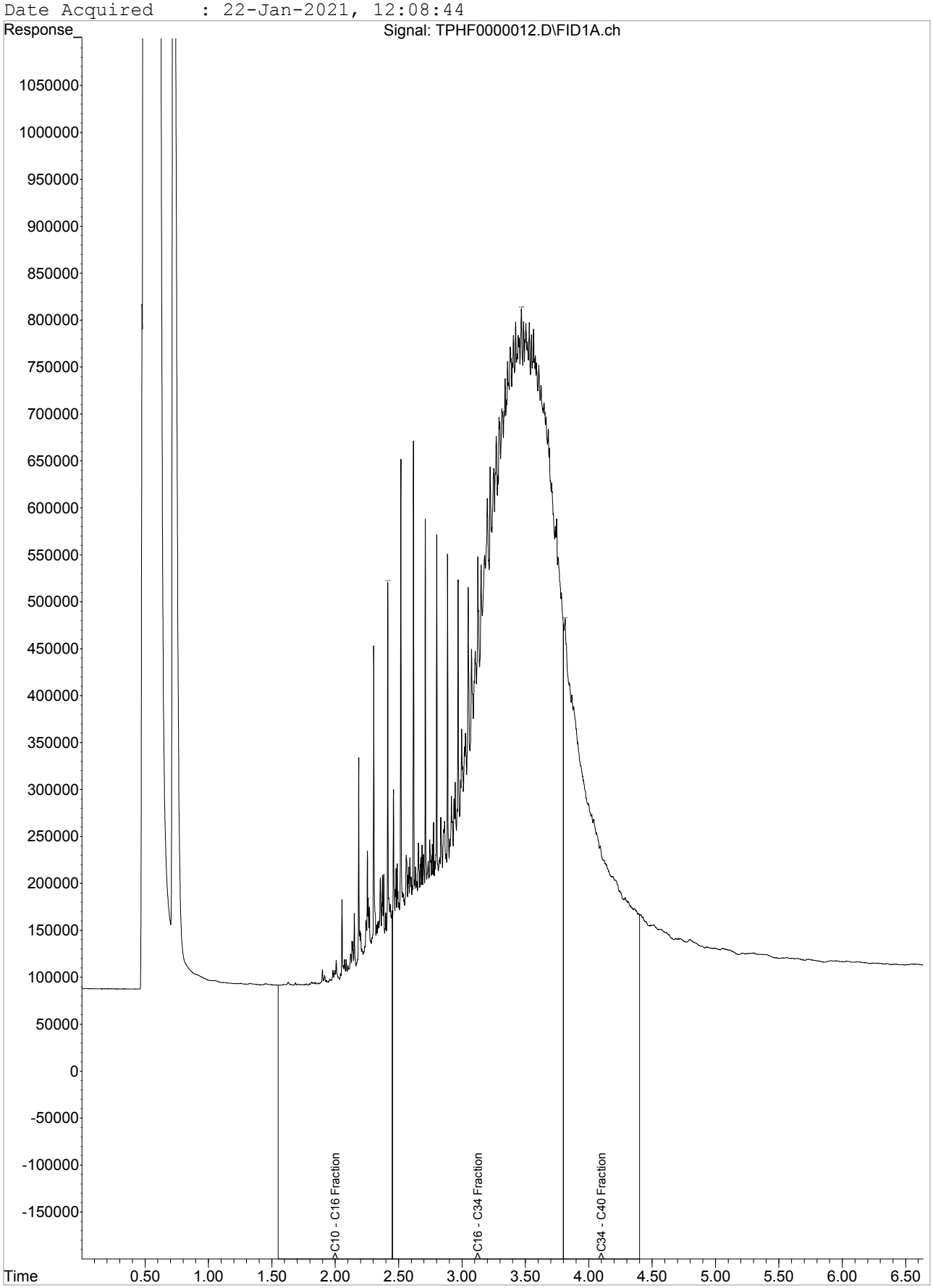


ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2101586**	Page	: 1 of 24
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: KATE HOLT	Contact	: Brenda Hong
Address	: LEVEL 21 420 GEORGE STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: 60619153/2g	Date Samples Received	: 15-Jan-2021
Order number	: 60619153/2g	Date Analysis Commenced	: 19-Jan-2021
C-O-C number	: ----	Issue Date	: 22-Jan-2021
Sampler	: Pankti Dalal		
Site	: AGL BLESS BH		
Quote number	: EN/004/20		
No. of samples received	: 22		
No. of samples analysed	: 22		

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
Ashesh Patel	Senior 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

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: 3467730)									
ES2101392-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	6	5	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	2	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	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	14	16	11.4	No Limit
ES2101586-009	Tank_0.1-0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	14	13.6	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	9	10	12.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	16	12.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	18	32.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	48	54	11.4	0% - 50%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3467732)									
ES2101586-019	BH006_0.0-0.1	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	14	26.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	11	13	16.9	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	7	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	21	22	6.41	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	30	38	25.4	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	62	83	29.1	0% - 50%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3470969)									
ES2101732-006	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	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 (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3470969) - continued									
ES2101732-006	Anonymous	EG005T: Chromium	7440-47-3	2	mg/kg	18	21	18.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	8	10	12.2	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	6	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	58	57	0.00	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	233	217	7.18	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	446	457	2.52	0% - 20%
ES2101417-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	30	31	4.42	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	14	14	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	9	15.7	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	20	22	5.31	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	14	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	29	31	9.04	No Limit
EA002: pH 1:5 (Soils) (QC Lot: 3467734)									
ES2101392-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.6	5.5	0.00	0% - 20%
ES2101586-010	Tank_0.2-0.3	EA002: pH Value	----	0.1	pH Unit	8.3	8.3	0.00	0% - 20%
EA002: pH 1:5 (Soils) (QC Lot: 3467736)									
ES2101586-020	BH006_0.2-0.3	EA002: pH Value	----	0.1	pH Unit	8.8	9.0	2.59	0% - 20%
EA002: pH 1:5 (Soils) (QC Lot: 3470944)									
EW2100171-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	5.2	5.2	0.00	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3467737)									
ES2101392-003	Anonymous	EA055: Moisture Content	----	0.1	%	3.8	4.0	4.18	No Limit
ES2101586-012	BH003_0.0-0.1	EA055: Moisture Content	----	0.1	%	8.0	7.9	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3470971)									
ES2101732-001	Anonymous	EA055: Moisture Content	----	0.1	%	7.8	7.6	2.75	0% - 20%
ED006: Exchangeable Cations on Alkaline Soils (QC Lot: 3473453)									
ES2101586-008	Tank_0.0-0.1	ED006: Exchangeable Sodium Percent	----	0.2	%	14.9	15.1	0.972	0% - 20%
		ED006: Exchangeable Calcium	----	0.2	meq/100g	3.1	3.1	0.00	0% - 50%
		ED006: Exchangeable Magnesium	----	0.2	meq/100g	0.5	0.5	0.00	No Limit
		ED006: Exchangeable Potassium	----	0.2	meq/100g	<0.2	<0.2	0.00	No Limit
		ED006: Exchangeable Sodium	----	0.2	meq/100g	0.6	0.6	0.00	No Limit
		ED006: Cation Exchange Capacity	----	0.2	meq/100g	4.3	4.2	2.96	0% - 20%
ES2101586-017	BH005_0.0-0.1	ED006: Exchangeable Sodium Percent	----	0.2	%	<0.2	<0.2	0.00	No Limit
		ED006: Exchangeable Calcium	----	0.2	meq/100g	6.4	6.6	3.15	0% - 20%
		ED006: Exchangeable Magnesium	----	0.2	meq/100g	0.9	1.0	0.00	No Limit
		ED006: Exchangeable Potassium	----	0.2	meq/100g	0.7	0.8	0.00	No Limit
		ED006: Exchangeable Sodium	----	0.2	meq/100g	<0.2	<0.2	0.00	No Limit
		ED006: Cation Exchange Capacity	----	0.2	meq/100g	8.0	8.3	4.08	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3467731)									

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 (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3467731) - continued									
ES2101392-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES2101586-009	Tank_0.1-0.2	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: 3467733)									
ES2101586-019	BH006_0.0-0.1	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: 3470970)									
ES2101417-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3467362)									
ES2101586-004	QC100_200112	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 3469964)									
ES2101586-021	BH001_0.0-0.1	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 3467362)									
ES2101586-004	QC100_200112	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	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 (%)*
EP074B: Oxygenated Compounds (QC Lot: 3467362) - continued									
ES2101586-004	QC100_200112	EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 3469964)									
ES2101586-021	BH001_0.0-0.1	EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	<5	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	<5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 3467362)									
ES2101586-004	QC100_200112	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 3469964)									
ES2101586-021	BH001_0.0-0.1	EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 3467362)									
ES2101586-004	QC100_200112	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074D: Fumigants (QC Lot: 3469964)									
ES2101586-021	BH001_0.0-0.1	EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3467362)									
ES2101586-004	QC100_200112	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	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 (%)*
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3467362) - continued									
ES2101586-004	QC100_200112	EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	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 (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3467362) - continued									
ES2101586-014	BH003_0.7-0.8	EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 3469964)									
ES2101586-021	BH001_0.0-0.1	EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloromethane	74-87-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Bromomethane	74-83-9	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Chloroethane	75-00-3	5	mg/kg	<5	<5	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	<5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 3467362)									

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 (%)*
EP074F: Halogenated Aromatic Compounds (QC Lot: 3467362) - continued									
ES2101586-004	QC100_200112	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 3469964)									
ES2101586-021	BH001_0.0-0.1	EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 3467362)									
ES2101586-004	QC100_200112	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 3469964)									
ES2101586-021	BH001_0.0-0.1	EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	<0.5	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 (%)*
EP074G: Trihalomethanes (QC Lot: 3469964) - continued									
ES2101586-021	BH001_0.0-0.1	EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 3467362)									
ES2101586-004	QC100_200112	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP074H: Naphthalene (QC Lot: 3469964)									
ES2101586-021	BH001_0.0-0.1	EP074: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3467646)									
ES2101586-004	QC100_200112	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
ES2101586-017	BH005_0.0-0.1	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

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: 3467646) - continued									
ES2101586-017	BH005_0.0-0.1	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: 3469485)									
ES2101512-051	Anonymous	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: 3467363)									
ES2101586-004	QC100_200112	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3467647)									
ES2101586-004	QC100_200112	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
ES2101586-017	BH005_0.0-0.1	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3469486)									

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 Petroleum Hydrocarbons (QC Lot: 3469486) - continued									
ES2101512-051	Anonymous	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: 3469963)									
ES2101586-021	BH001_0.0-0.1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3467363)									
ES2101586-004	QC100_200112	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES2101586-014	BH003_0.7-0.8	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: 3467647)									
ES2101586-004	QC100_200112	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
ES2101586-017	BH005_0.0-0.1	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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3469486)									
ES2101512-051	Anonymous	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: 3469963)									
ES2101586-021	BH001_0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 3467363)									
ES2101586-004	QC100_200112	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
ES2101586-014	BH003_0.7-0.8	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: 3469963)									
ES2101586-021	BH001_0.0-0.1	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

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: BTEXN (QC Lot: 3469963) - continued									
ES2101586-021	BH001_0.0-0.1	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 Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020T: Total Metals by ICP-MS (QC Lot: 3471703)									
ES2101304-001	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	0.015	0.015	0.00	0% - 50%
		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	0.004	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	0.005	0.006	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES2101445-001	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	0.221	0.229	3.61	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	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	0.039	0.042	9.24	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3471711)									
ES2101106-009	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	0.0002	<0.0001	0.00	No Limit
ES2101586-003	QC302_200114	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3467801)									
ES2101483-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
ES2101488-005	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3467801)									
ES2101483-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
ES2101488-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 3467801)									
ES2101483-001	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

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: 3467801) - continued									
ES2101488-005	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: 3467730)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	92.8	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	93.0	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	85.0	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	96.1	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	86.1	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	86.0	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	76.2	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3467732)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	99.5	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	120	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	92.0	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	101	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	87.0	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	92.9	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	86.4	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3470969)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	101	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	128	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	20.2 mg/kg	120	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	103	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	62.1 mg/kg	104	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.4 mg/kg	107	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	162 mg/kg	84.5	66.0	133
ED006: Exchangeable Cations on Alkaline Soils (QCLot: 3473453)								
ED006: Exchangeable Calcium	----	0.2	meq/100g	<0.2	2.5 meq/100g	101	80.0	110
ED006: Exchangeable Magnesium	----	0.2	meq/100g	<0.2	4.17 meq/100g	96.2	80.0	110
ED006: Exchangeable Potassium	----	0.2	meq/100g	<0.2	1.28 meq/100g	106	80.0	110
ED006: Exchangeable Sodium	----	0.2	meq/100g	<0.2	2.17 meq/100g	104	80.0	110
ED006: Cation Exchange Capacity	----	0.2	meq/100g	<0.2	----	----	----	----
ED006: Exchangeable Sodium Percent	----	0.2	%	<0.2	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3467731)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	111	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3467733)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	105	70.0	130

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
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3470970)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.073 mg/kg	106	70.0	130
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3467362)								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	97.3	67.0	113
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	95.6	65.0	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	92.7	66.0	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	94.6	68.0	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	93.3	69.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	94.5	69.0	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	94.4	69.0	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	95.8	66.0	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	92.8	59.0	125
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 3469964)								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	96.0	67.0	113
EP074: Isopropylbenzene	98-82-8	0.5	mg/kg	<0.5	1 mg/kg	98.0	65.0	117
EP074: n-Propylbenzene	103-65-1	0.5	mg/kg	<0.5	1 mg/kg	95.0	66.0	122
EP074: 1.3.5-Trimethylbenzene	108-67-8	0.5	mg/kg	<0.5	1 mg/kg	94.9	68.0	118
EP074: sec-Butylbenzene	135-98-8	0.5	mg/kg	<0.5	1 mg/kg	97.3	69.0	119
EP074: 1.2.4-Trimethylbenzene	95-63-6	0.5	mg/kg	<0.5	1 mg/kg	95.3	69.0	117
EP074: tert-Butylbenzene	98-06-6	0.5	mg/kg	<0.5	1 mg/kg	96.2	69.0	115
EP074: p-Isopropyltoluene	99-87-6	0.5	mg/kg	<0.5	1 mg/kg	96.9	66.0	118
EP074: n-Butylbenzene	104-51-8	0.5	mg/kg	<0.5	1 mg/kg	98.3	59.0	125
EP074B: Oxygenated Compounds (QCLot: 3467362)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	96.0	29.6	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	103	58.0	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	103	62.0	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	100	54.0	136
EP074B: Oxygenated Compounds (QCLot: 3469964)								
EP074: Vinyl Acetate	108-05-4	5	mg/kg	<5	10 mg/kg	90.0	29.6	156
EP074: 2-Butanone (MEK)	78-93-3	5	mg/kg	<5	10 mg/kg	90.7	58.0	136
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	5	mg/kg	<5	10 mg/kg	90.7	62.0	132
EP074: 2-Hexanone (MBK)	591-78-6	5	mg/kg	<5	10 mg/kg	91.9	54.0	136
EP074C: Sulfonated Compounds (QCLot: 3467362)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	93.0	54.0	126
EP074C: Sulfonated Compounds (QCLot: 3469964)								
EP074: Carbon disulfide	75-15-0	0.5	mg/kg	<0.5	1 mg/kg	89.4	54.0	126
EP074D: Fumigants (QCLot: 3467362)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	99.9	60.0	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	98.2	68.0	124

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
EP074D: Fumigants (QCLot: 3467362) - continued								
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	96.1	51.0	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	98.2	52.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	98.1	63.0	115
EP074D: Fumigants (QCLot: 3469964)								
EP074: 2.2-Dichloropropane	594-20-7	0.5	mg/kg	<0.5	1 mg/kg	95.9	60.0	126
EP074: 1.2-Dichloropropane	78-87-5	0.5	mg/kg	<0.5	1 mg/kg	95.5	68.0	124
EP074: cis-1.3-Dichloropropylene	10061-01-5	0.5	mg/kg	<0.5	1 mg/kg	91.5	51.0	119
EP074: trans-1.3-Dichloropropylene	10061-02-6	0.5	mg/kg	<0.5	1 mg/kg	89.5	52.0	114
EP074: 1.2-Dibromoethane (EDB)	106-93-4	0.5	mg/kg	<0.5	1 mg/kg	97.6	63.0	115
EP074E: Halogenated Aliphatic Compounds (QCLot: 3467362)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	93.6	30.0	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	94.2	41.0	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	96.0	43.0	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	94.5	47.0	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	94.1	49.0	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	93.9	49.0	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	93.4	54.0	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	93.9	43.0	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	92.2	64.0	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	96.0	67.0	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	95.8	69.0	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	92.1	65.0	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	91.8	65.0	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	90.3	59.0	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	97.5	65.0	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	93.4	70.0	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	99.0	68.0	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	97.8	64.0	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	98.9	68.0	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	94.4	67.0	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	96.3	62.0	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	99.3	54.0	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	96.9	55.0	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	101	65.0	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	100	61.0	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	93.1	19.8	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	100	53.0	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	94.3	50.0	128

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
EP074E: Halogenated Aliphatic Compounds (QCLot: 3469964)								
EP074: Dichlorodifluoromethane	75-71-8	5	mg/kg	<5	10 mg/kg	105	30.0	148
EP074: Chloromethane	74-87-3	5	mg/kg	<5	10 mg/kg	103	41.0	141
EP074: Vinyl chloride	75-01-4	5	mg/kg	<5	10 mg/kg	98.4	43.0	147
EP074: Bromomethane	74-83-9	5	mg/kg	<5	10 mg/kg	100	47.0	141
EP074: Chloroethane	75-00-3	5	mg/kg	<5	10 mg/kg	99.2	49.0	143
EP074: Trichlorofluoromethane	75-69-4	5	mg/kg	<5	10 mg/kg	97.2	49.0	135
EP074: 1.1-Dichloroethene	75-35-4	0.5	mg/kg	<0.5	1 mg/kg	94.0	54.0	126
EP074: Iodomethane	74-88-4	0.5	mg/kg	<0.5	1 mg/kg	82.2	43.0	129
EP074: trans-1.2-Dichloroethene	156-60-5	0.5	mg/kg	<0.5	1 mg/kg	93.2	64.0	120
EP074: 1.1-Dichloroethane	75-34-3	0.5	mg/kg	<0.5	1 mg/kg	93.8	67.0	125
EP074: cis-1.2-Dichloroethene	156-59-2	0.5	mg/kg	<0.5	1 mg/kg	95.2	69.0	121
EP074: 1.1.1-Trichloroethane	71-55-6	0.5	mg/kg	<0.5	1 mg/kg	96.1	65.0	117
EP074: 1.1-Dichloropropylene	563-58-6	0.5	mg/kg	<0.5	1 mg/kg	92.3	65.0	123
EP074: Carbon Tetrachloride	56-23-5	0.5	mg/kg	<0.5	1 mg/kg	91.6	59.0	125
EP074: 1.2-Dichloroethane	107-06-2	0.5	mg/kg	<0.5	1 mg/kg	95.3	65.0	125
EP074: Trichloroethene	79-01-6	0.5	mg/kg	<0.5	1 mg/kg	97.4	70.0	118
EP074: Dibromomethane	74-95-3	0.5	mg/kg	<0.5	1 mg/kg	93.3	68.0	118
EP074: 1.1.2-Trichloroethane	79-00-5	0.5	mg/kg	<0.5	1 mg/kg	96.4	64.0	126
EP074: 1.3-Dichloropropane	142-28-9	0.5	mg/kg	<0.5	1 mg/kg	95.7	68.0	122
EP074: Tetrachloroethene	127-18-4	0.5	mg/kg	<0.5	1 mg/kg	99.8	67.0	143
EP074: 1.1.1.2-Tetrachloroethane	630-20-6	0.5	mg/kg	<0.5	1 mg/kg	93.8	62.0	122
EP074: trans-1.4-Dichloro-2-butene	110-57-6	0.5	mg/kg	<0.5	1 mg/kg	93.5	54.0	128
EP074: cis-1.4-Dichloro-2-butene	1476-11-5	0.5	mg/kg	<0.5	1 mg/kg	86.7	55.0	129
EP074: 1.1.2.2-Tetrachloroethane	79-34-5	0.5	mg/kg	<0.5	1 mg/kg	93.2	65.0	121
EP074: 1.2.3-Trichloropropane	96-18-4	0.5	mg/kg	<0.5	1 mg/kg	95.9	61.0	125
EP074: Pentachloroethane	76-01-7	0.5	mg/kg	<0.5	1 mg/kg	90.6	19.8	134
EP074: 1.2-Dibromo-3-chloropropane	96-12-8	0.5	mg/kg	<0.5	1 mg/kg	97.9	53.0	129
EP074: Hexachlorobutadiene	87-68-3	0.5	mg/kg	<0.5	1 mg/kg	103	50.0	128
EP074F: Halogenated Aromatic Compounds (QCLot: 3467362)								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	97.4	68.0	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	96.8	70.0	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	94.9	68.0	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	95.3	67.0	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	96.0	70.0	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	96.2	67.0	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	97.7	70.0	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	96.3	48.0	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	98.4	52.0	122
EP074F: Halogenated Aromatic Compounds (QCLot: 3469964)								

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
EP074F: Halogenated Aromatic Compounds (QCLot: 3469964) - continued								
EP074: Chlorobenzene	108-90-7	0.5	mg/kg	<0.5	1 mg/kg	99.2	68.0	116
EP074: Bromobenzene	108-86-1	0.5	mg/kg	<0.5	1 mg/kg	93.0	70.0	114
EP074: 2-Chlorotoluene	95-49-8	0.5	mg/kg	<0.5	1 mg/kg	95.2	68.0	122
EP074: 4-Chlorotoluene	106-43-4	0.5	mg/kg	<0.5	1 mg/kg	95.9	67.0	123
EP074: 1.3-Dichlorobenzene	541-73-1	0.5	mg/kg	<0.5	1 mg/kg	94.6	70.0	116
EP074: 1.4-Dichlorobenzene	106-46-7	0.5	mg/kg	<0.5	1 mg/kg	97.8	67.0	117
EP074: 1.2-Dichlorobenzene	95-50-1	0.5	mg/kg	<0.5	1 mg/kg	96.2	70.0	114
EP074: 1.2.4-Trichlorobenzene	120-82-1	0.5	mg/kg	<0.5	1 mg/kg	102	48.0	122
EP074: 1.2.3-Trichlorobenzene	87-61-6	0.5	mg/kg	<0.5	1 mg/kg	100	52.0	122
EP074G: Trihalomethanes (QCLot: 3467362)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	94.9	66.0	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	95.2	61.0	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	94.4	63.0	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	95.2	60.0	126
EP074G: Trihalomethanes (QCLot: 3469964)								
EP074: Chloroform	67-66-3	0.5	mg/kg	<0.5	1 mg/kg	93.2	66.0	124
EP074: Bromodichloromethane	75-27-4	0.5	mg/kg	<0.5	1 mg/kg	89.9	61.0	121
EP074: Dibromochloromethane	124-48-1	0.5	mg/kg	<0.5	1 mg/kg	91.6	63.0	121
EP074: Bromoform	75-25-2	0.5	mg/kg	<0.5	1 mg/kg	88.4	60.0	126
EP074H: Naphthalene (QCLot: 3467362)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	102	67.0	129
EP074H: Naphthalene (QCLot: 3469964)								
EP074: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	107	67.0	129
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3467646)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	123	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	116	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	124	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	113	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	124	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	121	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	126	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	125	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	106	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	120	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	108	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	122	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	113	70.0	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: 3467646) - continued								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	106	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	88.5	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	91.0	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3469485)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	95.0	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	98.4	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	99.3	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	98.6	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	97.5	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	98.8	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	98.8	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	98.5	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.2	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	103	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	101	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	98.2	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	93.9	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	86.2	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	83.2	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	83.7	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3467363)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	98.5	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3467647)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	103	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	102	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	113	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3469486)								
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	97.0	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	95.8	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3469963)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	118	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3467363)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	101	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3467647)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	96.0	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	99.9	74.0	138

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3467647) - continued								
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	77.8	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3469486)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	96.8	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	97.4	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: 3469963)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	121	68.4	128
EP080: BTEXN (QCLot: 3467363)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	107	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	102	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	101	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	102	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	90.7	63.0	119
EP080: BTEXN (QCLot: 3469963)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	103	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	104	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	104	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	106	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	102	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: 3471703)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	95.4	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.5	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	92.2	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.2	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.3	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.5	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.6	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3471711)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.8	77.0	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3467641)								

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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3467641) - continued								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	91.8	55.8	112
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	98.2	71.6	113
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	99.5	56.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3467801)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	91.4	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3467641)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	76.8	57.9	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	89.3	62.5	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	86.6	61.5	121
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3467801)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	93.1	75.0	127
EP080: BTEXN (QCLot: 3467801)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.7	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	107	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	110	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	111	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	115	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	117	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 Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3467730)							
ES2101392-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	92.7	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	86.7	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	86.4	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	90.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	89.7	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	96.8	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3467732)							
ES2101586-019	BH006_0.0-0.1	EG005T: Arsenic	7440-38-2	50 mg/kg	96.7	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	81.2	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: 3467732) - continued							
ES2101586-019	BH006_0.0-0.1	EG005T: Chromium	7440-47-3	50 mg/kg	89.2	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	94.7	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	89.3	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	98.4	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3470969)							
ES2101417-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	82.2	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.5	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	92.0	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	91.7	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	95.3	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	94.3	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	90.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3467731)							
ES2101392-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	87.2	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3467733)							
ES2101586-019	BH006_0.0-0.1	EG035T: Mercury	7439-97-6	5 mg/kg	81.4	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3470970)							
ES2101417-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	85.6	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3467362)							
ES2101586-004	QC100_200112	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	100	70.0	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	89.9	70.0	130
EP074E: Halogenated Aliphatic Compounds (QCLot: 3469964)							
ES2101586-021	BH001_0.0-0.1	EP074: 1.1-Dichloroethene	75-35-4	2.5 mg/kg	92.4	70.0	130
		EP074: Trichloroethene	79-01-6	2.5 mg/kg	104	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3467362)							
ES2101586-004	QC100_200112	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	87.0	70.0	130
EP074F: Halogenated Aromatic Compounds (QCLot: 3469964)							
ES2101586-021	BH001_0.0-0.1	EP074: Chlorobenzene	108-90-7	2.5 mg/kg	109	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3467646)							
ES2101586-004	QC100_200112	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	108	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	112	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3469485)							
ES2101512-051	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	98.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	100	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
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3467363)							
ES2101586-004	QC100_200112	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.3	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3467647)							
ES2101586-004	QC100_200112	EP071: C10 - C14 Fraction	----	523 mg/kg	104	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	109	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	123	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3469486)							
ES2101512-051	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	107	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	121	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	132	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3469963)							
ES2101586-021	BH001_0.0-0.1	EP080: C6 - C9 Fraction	----	32.5 mg/kg	123	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3467363)							
ES2101586-004	QC100_200112	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	100	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3467647)							
ES2101586-004	QC100_200112	EP071: >C10 - C16 Fraction	----	860 mg/kg	95.6	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	117	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	102	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3469486)							
ES2101512-051	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	125	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	120	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	131	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3469963)							
ES2101586-021	BH001_0.0-0.1	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	124	70.0	130
EP080: BTEXN (QCLot: 3467363)							
ES2101586-004	QC100_200112	EP080: Benzene	71-43-2	2.5 mg/kg	113	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	97.8	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	98.8	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	98.7	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	100	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	90.6	70.0	130
EP080: BTEXN (QCLot: 3469963)							
ES2101586-021	BH001_0.0-0.1	EP080: Benzene	71-43-2	2.5 mg/kg	104	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	108	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	110	70.0	130

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: BTEXN (QCLot: 3469963) - continued							
ES2101586-021	BH001_0.0-0.1	EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	110	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	110	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	103	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: 3471703)							
ES2101304-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	93.8	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	90.0	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	88.3	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	76.7	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	86.7	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	89.2	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	83.1	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3471711)							
ES2101106-010	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	78.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3467801)							
ES2101483-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	106	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3467801)							
ES2101483-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	107	70.0	130
EP080: BTEXN (QCLot: 3467801)							
ES2101483-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	108	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	99.7	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	99.9	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	100	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	102	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	92.8	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2101586**	Page	: 1 of 15
Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: KATE HOLT	Telephone	: +61 2 8784 8555
Project	: 60619153/2g	Date Samples Received	: 15-Jan-2021
Site	: AGL BLESS BH	Issue Date	: 22-Jan-2021
Sampler	: Pankti Dalal	No. of samples received	: 22
Order number	: 60619153/2g	No. of samples analysed	: 22

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.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **Analysis Holding Time Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

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

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA002: pH 1:5 (Soils)						
Soil Glass Jar - Unpreserved						
BH003_0.0-0.1, BH003_0.5-0.6, BH003_0.7-0.8, BH002_0.0-0.3, BH004_0.0-0.3	----	----	----	20-Jan-2021	19-Jan-2021	**1**
Soil Glass Jar - Unpreserved						
BH005_0.0-0.1, BH005_0.4-0.5	----	----	----	20-Jan-2021	19-Jan-2021	**1**
Soil Glass Jar - Unpreserved						
Tank_0.0-0.1, Tank_0.1-0.2, Tank_0.2-0.3, Tank_0.3-0.4, BH006_0.0-0.1, BH006_0.2-0.3	----	----	----	20-Jan-2021	19-Jan-2021	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
TRH - Semivolatile Fraction	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
TRH - Semivolatile Fraction	0	5	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) BH003_0.0-0.1, BH003_0.5-0.6, BH003_0.7-0.8, BH002_0.0-0.3, BH004_0.0-0.3	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**20-Jan-2021**	19-Jan-2021	×
Soil Glass Jar - Unpreserved (EA002) BH005_0.0-0.1, BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	19-Jan-2021	×
Soil Glass Jar - Unpreserved (EA002) BH001_0.0-0.1	**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EA002) Tank_0.0-0.1, Tank_0.1-0.2, Tank_0.2-0.3, Tank_0.3-0.4, BH006_0.0-0.1, BH006_0.2-0.3	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**20-Jan-2021**	19-Jan-2021	×
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QC100_200112, BH003_0.0-0.1, BH003_0.5-0.6, BH003_0.7-0.8, BH002_0.0-0.3, BH004_0.0-0.3	**12-Jan-2021**	**----**	----	----	**19-Jan-2021**	26-Jan-2021	✓
Soil Glass Jar - Unpreserved (EA055) BH005_0.0-0.1, BH005_0.4-0.5	**13-Jan-2021**	**----**	----	----	**19-Jan-2021**	27-Jan-2021	✓
Soil Glass Jar - Unpreserved (EA055) BH001_0.0-0.1	**13-Jan-2021**	**----**	----	----	**20-Jan-2021**	27-Jan-2021	✓
Soil Glass Jar - Unpreserved (EA055) Tank_0.0-0.1, Tank_0.1-0.2, Tank_0.2-0.3, Tank_0.3-0.4, BH006_0.0-0.1, BH006_0.2-0.3	**14-Jan-2021**	**----**	----	----	**19-Jan-2021**	28-Jan-2021	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) BH003_0.0-0.1, BH002_0.0-0.3, BH004_0.0-0.3	**12-Jan-2021**	**----**	----	----	**20-Jan-2021**	11-Jul-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) BH005_0.0-0.1	**13-Jan-2021**	**----**	----	----	**20-Jan-2021**	12-Jul-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) BH001_0.0-0.1	**13-Jan-2021**	**----**	----	----	**21-Jan-2021**	12-Jul-2021	✓
Snap Lock Bag - ACM/Asbestos Grab Bag (EA200) BH006_0.0-0.1	**14-Jan-2021**	**----**	----	----	**20-Jan-2021**	13-Jul-2021	✓

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
ED006: Exchangeable Cations on Alkaline Soils								
Soil Glass Jar - Unpreserved (ED006)								
BH003_0.0-0.1,	BH003_0.5-0.6,	**12-Jan-2021**	**21-Jan-2021**	09-Feb-2021	✓	**21-Jan-2021**	09-Feb-2021	✓
BH003_0.7-0.8,	BH002_0.0-0.3,							
BH004_0.0-0.3								
Soil Glass Jar - Unpreserved (ED006)								
BH005_0.0-0.1,	BH005_0.4-0.5,	**13-Jan-2021**	**21-Jan-2021**	10-Feb-2021	✓	**21-Jan-2021**	10-Feb-2021	✓
BH001_0.0-0.1								
Soil Glass Jar - Unpreserved (ED006)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**21-Jan-2021**	11-Feb-2021	✓	**21-Jan-2021**	11-Feb-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	11-Jul-2021	✓	**20-Jan-2021**	11-Jul-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EG005T)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	12-Jul-2021	✓	**20-Jan-2021**	12-Jul-2021	✓
Soil Glass Jar - Unpreserved (EG005T)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	12-Jul-2021	✓	**21-Jan-2021**	12-Jul-2021	✓
Soil Glass Jar - Unpreserved (EG005T)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	13-Jul-2021	✓	**20-Jan-2021**	13-Jul-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	09-Feb-2021	✓	**20-Jan-2021**	09-Feb-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EG035T)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	10-Feb-2021	✓	**20-Jan-2021**	10-Feb-2021	✓
Soil Glass Jar - Unpreserved (EG035T)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	10-Feb-2021	✓	**22-Jan-2021**	10-Feb-2021	✓
Soil Glass Jar - Unpreserved (EG035T)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	11-Feb-2021	✓	**20-Jan-2021**	11-Feb-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							

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
EP074A: Monocyclic Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP074)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**19-Jan-2021**	19-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP074)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**19-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**19-Jan-2021**	21-Jan-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
EP074B: Oxygenated Compounds								
Soil Glass Jar - Unpreserved (EP074)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**19-Jan-2021**	19-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP074)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**19-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**19-Jan-2021**	21-Jan-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
EP074C: Sulfonated Compounds								
Soil Glass Jar - Unpreserved (EP074)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**19-Jan-2021**	19-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP074)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**19-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**19-Jan-2021**	21-Jan-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							

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
EP074D: Fumigants								
Soil Glass Jar - Unpreserved (EP074)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**19-Jan-2021**	19-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP074)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**19-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**19-Jan-2021**	21-Jan-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
EP074E: Halogenated Aliphatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**19-Jan-2021**	19-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP074)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**19-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**19-Jan-2021**	21-Jan-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
EP074F: Halogenated Aromatic Compounds								
Soil Glass Jar - Unpreserved (EP074)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**19-Jan-2021**	19-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP074)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**19-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**19-Jan-2021**	21-Jan-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							

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
EP074G: Trihalomethanes							
Soil Glass Jar - Unpreserved (EP074)							
QC100_200112, BH003_0.0-0.1, BH003_0.5-0.6, BH003_0.7-0.8, BH002_0.0-0.3, BH004_0.0-0.3	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**19-Jan-2021**	19-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)							
BH005_0.0-0.1, BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**19-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)							
BH001_0.0-0.1	**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)							
Tank_0.0-0.1, Tank_0.1-0.2, Tank_0.2-0.3, Tank_0.3-0.4, BH006_0.0-0.1, BH006_0.2-0.3	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**19-Jan-2021**	21-Jan-2021	✓
EP074H: Naphthalene							
Soil Glass Jar - Unpreserved (EP074)							
QC100_200112, BH003_0.0-0.1, BH003_0.5-0.6, BH003_0.7-0.8, BH002_0.0-0.3, BH004_0.0-0.3	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**19-Jan-2021**	19-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)							
BH005_0.0-0.1, BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**19-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)							
BH001_0.0-0.1	**13-Jan-2021**	**20-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	20-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP074)							
Tank_0.0-0.1, Tank_0.1-0.2, Tank_0.2-0.3, Tank_0.3-0.4, BH006_0.0-0.1, BH006_0.2-0.3	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**19-Jan-2021**	21-Jan-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
QC100_200112, BH003_0.0-0.1, BH003_0.5-0.6, BH003_0.7-0.8, BH002_0.0-0.3, BH004_0.0-0.3	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH005_0.0-0.1, BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH001_0.0-0.1	**13-Jan-2021**	**20-Jan-2021**	27-Jan-2021	✓	**20-Jan-2021**	01-Mar-2021	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
Tank_0.0-0.1, Tank_0.1-0.2, Tank_0.2-0.3, Tank_0.3-0.4, BH006_0.0-0.1, BH006_0.2-0.3	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓

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 Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080)								
TSC		**11-Jan-2021**	**19-Jan-2021**	25-Jan-2021	✓	**19-Jan-2021**	25-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**19-Jan-2021**	26-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP071)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP080)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**19-Jan-2021**	27-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP071)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	27-Jan-2021	✓	**20-Jan-2021**	27-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
QC400_200114 - TB,	QC500_200114 - TS,	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**19-Jan-2021**	28-Jan-2021	✓
Tank_0.0-0.1,	Tank_0.1-0.2,							
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
Soil Glass Jar - Unpreserved (EP071)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							

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)								
TSC		**11-Jan-2021**	**19-Jan-2021**	25-Jan-2021	✓	**19-Jan-2021**	25-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**19-Jan-2021**	26-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP071)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP080)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**19-Jan-2021**	27-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP071)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	27-Jan-2021	✓	**20-Jan-2021**	27-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
QC400_200114 - TB,	QC500_200114 - TS,	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**19-Jan-2021**	28-Jan-2021	✓
Tank_0.0-0.1,	Tank_0.1-0.2,							
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
Soil Glass Jar - Unpreserved (EP071)								
Tank_0.0-0.1,	Tank_0.1-0.2,	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**21-Jan-2021**	28-Feb-2021	✓
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							
EP080: BTEXN								
Soil Glass Jar - Unpreserved (EP080)								
TSC		**11-Jan-2021**	**19-Jan-2021**	25-Jan-2021	✓	**19-Jan-2021**	25-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
QC100_200112,	BH003_0.0-0.1,	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**19-Jan-2021**	26-Jan-2021	✓
BH003_0.5-0.6,	BH003_0.7-0.8,							
BH002_0.0-0.3,	BH004_0.0-0.3							
Soil Glass Jar - Unpreserved (EP080)								
BH005_0.0-0.1,	BH005_0.4-0.5	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**19-Jan-2021**	27-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
BH001_0.0-0.1		**13-Jan-2021**	**20-Jan-2021**	27-Jan-2021	✓	**20-Jan-2021**	27-Jan-2021	✓
Soil Glass Jar - Unpreserved (EP080)								
QC400_200114 - TB,	QC500_200114 - TS,	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**19-Jan-2021**	28-Jan-2021	✓
Tank_0.0-0.1,	Tank_0.1-0.2,							
Tank_0.2-0.3,	Tank_0.3-0.4,							
BH006_0.0-0.1,	BH006_0.2-0.3							

Matrix: **SOLID**

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

Matrix: **SOLID**

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 bulk samples							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
Fragment_200114_200114	**14-Jan-2021**	**----**	----	----	**20-Jan-2021**	13-Jul-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
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
QC300_210112	**12-Jan-2021**	**21-Jan-2021**	11-Jul-2021	✓	**21-Jan-2021**	11-Jul-2021	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
QC301_210113	**13-Jan-2021**	**21-Jan-2021**	12-Jul-2021	✓	**21-Jan-2021**	12-Jul-2021	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)							
QC302_200114	**14-Jan-2021**	**21-Jan-2021**	13-Jul-2021	✓	**21-Jan-2021**	13-Jul-2021	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
QC300_210112	**12-Jan-2021**	**----**	----	----	**21-Jan-2021**	09-Feb-2021	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
QC301_210113	**13-Jan-2021**	**----**	----	----	**21-Jan-2021**	10-Feb-2021	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)							
QC302_200114	**14-Jan-2021**	**----**	----	----	**21-Jan-2021**	11-Feb-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
QC300_210112	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**20-Jan-2021**	28-Feb-2021	✓
Amber Glass Bottle - Unpreserved (EP071)							
QC301_210113	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	28-Feb-2021	✓
Amber Glass Bottle - Unpreserved (EP071)							
QC302_200114	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**20-Jan-2021**	28-Feb-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC300_210112	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**19-Jan-2021**	26-Jan-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC301_210113	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**19-Jan-2021**	27-Jan-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
QC302_200114	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**19-Jan-2021**	28-Jan-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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) QC300_210112	**12-Jan-2021**	**19-Jan-2021**	19-Jan-2021	✓	**20-Jan-2021**	28-Feb-2021	✓
Amber Glass Bottle - Unpreserved (EP071) QC301_210113	**13-Jan-2021**	**19-Jan-2021**	20-Jan-2021	✓	**20-Jan-2021**	28-Feb-2021	✓
Amber Glass Bottle - Unpreserved (EP071) QC302_200114	**14-Jan-2021**	**19-Jan-2021**	21-Jan-2021	✓	**20-Jan-2021**	28-Feb-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC300_210112	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**19-Jan-2021**	26-Jan-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC301_210113	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**19-Jan-2021**	27-Jan-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC302_200114	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**19-Jan-2021**	28-Jan-2021	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) QC300_210112	**12-Jan-2021**	**19-Jan-2021**	26-Jan-2021	✓	**19-Jan-2021**	26-Jan-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC301_210113	**13-Jan-2021**	**19-Jan-2021**	27-Jan-2021	✓	**19-Jan-2021**	27-Jan-2021	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC302_200114	**14-Jan-2021**	**19-Jan-2021**	28-Jan-2021	✓	**19-Jan-2021**	28-Jan-2021	✓

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)							
Exchangeable Cations on Alkaline Soils	ED006	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	3	30	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	4	23	**17.39**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	28	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	34	**14.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	21	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Exchangeable Cations on Alkaline Soils	ED006	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	28	**10.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	34	**8.82**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Exchangeable Cations on Alkaline Soils	ED006	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	28	**10.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	34	**8.82**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	28	**10.71**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	34	**8.82**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	21	**9.52**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	**11.11**	**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	

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)							
Total Mercury by FIMS	EG035T	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	10	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	5	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**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).
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.
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).
Volatile Organic Compounds	EP074	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. This method is 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.
Asbestos Identification in Bulk Solids	EA200	SOLID	In house: Referenced to AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
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.

Analytical Methods	Method	Matrix	Method Descriptions
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)
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)
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.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2101586**

Client	: **AECOM Australia Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: KATE HOLT	Contact	: Brenda Hong
Address	: LEVEL 21 420 GEORGE STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: kate.holt@aecom.com	E-mail	: Brenda.Hong@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 60619153/2g	Page	: 1 of 4
Order number	: 60619153/2g	Quote number	: ES2020AECOMAU0033 (EN/004/20)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: AGL BLESS BH		
Sampler	: Pankti Dalal		

Dates

Date Samples Received	: 15-Jan-2021 18:20	Issue Date	: 21-Jan-2021
Client Requested Due Date	: 22-Jan-2021	Scheduled Reporting Date	: **22-Jan-2021**

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 1	Temperature	: 10.2' C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 22 / 22

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
- 19/1/21: This is an updated SRN which indicates the additional analysis requested.
- **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.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Asbestos not logged for Tank_0.0-0.1 as the appropriate container was not received.
- 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.**

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2101586-007 : [14-Jan-2021] : Fragment_200114_200114

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	Sampling date / time	Sample ID	SOIL - EA002 pH (1:5)	SOIL - EA055-103 Moisture Content	SOIL - EP074 (solids) Volatile Organic Compounds	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2101586-004	12-Jan-2021 00:00	QC100_200112		✓	✓		✓
ES2101586-005	14-Jan-2021 00:00	QC400_200114 TB				✓	
ES2101586-006	14-Jan-2021 00:00	QC500_200114 TS				✓	
ES2101586-008	14-Jan-2021 00:00	Tank_0.0-0.1	✓	✓	✓		✓
ES2101586-009	14-Jan-2021 00:00	Tank_0.1-0.2	✓	✓	✓		✓
ES2101586-010	14-Jan-2021 00:00	Tank_0.2-0.3	✓	✓	✓		✓
ES2101586-011	14-Jan-2021 00:00	Tank_0.3-0.4	✓	✓	✓		✓
ES2101586-012	12-Jan-2021 00:00	BH003_0.0-0.1	✓	✓	✓		✓
ES2101586-013	12-Jan-2021 00:00	BH003_0.5-0.6	✓	✓	✓		✓
ES2101586-014	12-Jan-2021 00:00	BH003_0.7-0.8	✓	✓	✓		✓
ES2101586-015	12-Jan-2021 00:00	BH002_0.0-0.3	✓	✓	✓		✓
ES2101586-016	12-Jan-2021 00:00	BH004_0.0-0.3	✓	✓	✓		✓
ES2101586-017	13-Jan-2021 00:00	BH005_0.0-0.1	✓	✓	✓		✓
ES2101586-018	13-Jan-2021 00:00	BH005_0.4-0.5	✓	✓	✓		✓
ES2101586-019	14-Jan-2021 00:00	BH006_0.0-0.1	✓	✓	✓		✓
ES2101586-020	14-Jan-2021 00:00	BH006_0.2-0.3	✓	✓	✓		✓
ES2101586-021	13-Jan-2021 00:00	BH001_0.0-0.1	✓	✓	✓		✓
ES2101586-022	11-Jan-2021 00:00	TSC				✓	

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA200G Asbestos Identification in Soils -	SOIL - ED006 Def Exchangeable Cations on Alkaline Soils - Default
ES2101586-008	14-Jan-2021 00:00	Tank_0.0-0.1		✓
ES2101586-009	14-Jan-2021 00:00	Tank_0.1-0.2		✓
ES2101586-010	14-Jan-2021 00:00	Tank_0.2-0.3		✓
ES2101586-011	14-Jan-2021 00:00	Tank_0.3-0.4		✓

			SOIL - EA200G Asbestos Identification in Soils -	SOIL - ED006 Def Exchangeable Cations on Alkaline Soils - Default
ES2101586-012	12-Jan-2021 00:00	BH003_0.0-0.1	✓	✓
ES2101586-013	12-Jan-2021 00:00	BH003_0.5-0.6		✓
ES2101586-014	12-Jan-2021 00:00	BH003_0.7-0.8		✓
ES2101586-015	12-Jan-2021 00:00	BH002_0.0-0.3	✓	✓
ES2101586-016	12-Jan-2021 00:00	BH004_0.0-0.3	✓	✓
ES2101586-017	13-Jan-2021 00:00	BH005_0.0-0.1	✓	✓
ES2101586-018	13-Jan-2021 00:00	BH005_0.4-0.5		✓
ES2101586-019	14-Jan-2021 00:00	BH006_0.0-0.1	✓	✓
ES2101586-020	14-Jan-2021 00:00	BH006_0.2-0.3		✓
ES2101586-021	13-Jan-2021 00:00	BH001_0.0-0.1	✓	✓

Matrix: **SOLID**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOLID - EA200B Asbestos Identification in Bulk Solids (Excluding
ES2101586-007	14-Jan-2021 00:00	Fragment_200114_2001...	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - W-05T TRH/BTEXN/8 Metals (Total)
ES2101586-001	12-Jan-2021 00:00	QC300_210112	✓
ES2101586-002	13-Jan-2021 00:00	QC301_210113	✓
ES2101586-003	14-Jan-2021 00:00	QC302_200114	✓

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	AP_CustomerService.ANZ@aecom.com
- Chain of Custody (CoC) (COC)	Email	AP_CustomerService.ANZ@aecom.com

KATE HOLT

- *AU Certificate of Analysis - NATA (COA)	Email	kate.holt@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	kate.holt@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	kate.holt@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	kate.holt@aecom.com
- Chain of Custody (CoC) (COC)	Email	kate.holt@aecom.com
- Chromatogram (CHROM)	Email	kate.holt@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	kate.holt@aecom.com
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	kate.holt@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	kate.holt@aecom.com
- EDI Format - XTab (XTAB)	Email	kate.holt@aecom.com
- Electronic SRN for EQuIS (ESRN_EQUIS)	Email	kate.holt@aecom.com

PANKTI DALAL

- *AU Certificate of Analysis - NATA (COA)	Email	pankti.dalal@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	pankti.dalal@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	pankti.dalal@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	pankti.dalal@aecom.com
- Chain of Custody (CoC) (COC)	Email	pankti.dalal@aecom.com
- Chromatogram (CHROM)	Email	pankti.dalal@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	pankti.dalal@aecom.com
- EDI Format - EQUIS V5 AECOM (EQUIS_V5_AECOM)	Email	pankti.dalal@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	pankti.dalal@aecom.com
- EDI Format - XTab (XTAB)	Email	pankti.dalal@aecom.com
- Electronic SRN for EQuIS (ESRN_EQUIS)	Email	pankti.dalal@aecom.com

AECOM

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS: Level 21, 420 George Street, Sydney	SAMPLER: Pankti Dalai	Destination Laboratory: ALS
PROJECT MANAGER (PM): Kate Holt	SITE: AGL BESS BH	MOBILE: M +61 488 213 287 PHONE:	
PROJECT NUMBER & TASK CODE: 60619153/2g	P.O. NO.:	EMAIL REPORT TO: pankti.dalal@aecom.com, kate.holt@aecom.com	
RESULTS REQUIRED (Date): Standard TAT		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate) Intact: Yes No N/A
SAMPLE TEMPERATURE: 10.2
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
Please send SRN ASAP, Please forward QC200 Eurofins ASAP and re-iced as appropriate. Please invoice anna.andrzejewski.aecom.com

ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type/ Code	Total Bottles	TRH, BTEXN	TRH C6-C9, BTEXN	BTEXN	Asbestos (absence/presence)	pH	Cation Exchange Capacity	Metals	PAHs	VOCs		HOLD	
1	QC300_210112	Water	12/01/2021		2 x vials, 1 x preserved metals, 1 x amber	4	X						X					Rinsate
2	QC301_210113	Water	13/01/2021		2 x vials, 1 x preserved metals, 1 x amber	4	X						X					Rinsate
3	QC302_210114	Water	14/01/2021		2 x vials, 1 x preserved metals, 1 x amber	4	X						X					Rinsate
—	QC200_200113	Soil	13/01/2021		1 x soil jar (glass)	1	X						X	X	X			**Please forward to Envirolab ASAP**
4	QC100_200112	Soil	12/01/2021		1 x soil jar (glass)	1	X						X	X	X			
5	QC400_200114	Soil	14/01/2021		1 x soil jar (glass)	1		X										Trip Blank
6	QC500_200114	Soil	14/01/2021		1 x soil jar (glass)	1			X									Trip Spike
7	Fragment_200114	Soil	14/01/2021		1 x ACM Bag	1				X								Potential ACM Fragment grab sample
8	Tank_0.0-0.1	Soil	14/01/2021		1 x soil jar (glass)	1	X			X	X	X	X	X	X			
9	Tank_0.1-0.2	Soil	14/01/2021		1 x soil jar (glass)	1	X				X	X	X	X	X			
10	Tank_0.2-0.3	Soil	14/01/2021		1 x soil jar (glass)	1	X				X	X	X	X	X			
11	Tank_0.3-0.4	Soil	14/01/2021		1 x soil jar (glass)	1	X				X	X	X	X	X			
12	BH003_0.0-0.1	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X			X	X	X	X	X	X			
13	BH003_0.5-0.6	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X				X	X	X	X	X			
14	BH003_0.7-0.8	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X				X	X	X	X	X			
15	BH002_0.0-0.3	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X			X	X	X	X	X	X			
16	BH004_0.0-0.3	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X			X	X	X	X	X	X			
17	BH005_0.0-0.1	Soil	13/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X			X	X	X	X	X	X			
18	BH005_0.4-0.5	Soil	13/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X				X	X	X	X	X			

TB
TS

RELINQUISHED BY		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Pankti Dalal	Date: 27/11/2020	Name: Vishal Patel	Date: 15/01/2021	Name:	Date:	Con' Note No:
Of: AECOM	Time:	Of: ALS	Time: 1820	Of:	Time:	Transport Co: Express courier

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. Soil Container Co

Environmental Division
Sydney
Work Order Reference
ES2101586

Telephone : + 61-2-8784 8555

3

AECOM

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS: Level 21, 420 George Street, Sydney	SAMPLER: Pankti Dalal		Destination Laboratory
PROJECT MANAGER (PM): Kate Holt	SITE: AGL BESS BH	MOBILE: M +61 488 213 287	PHONE:	ALS
PROJECT NUMBER & TASK CODE: 60619153/2g	P.O. NO.:	EMAIL REPORT TO: pankti.dalal@aecom.com, kate.holt@aecom.com		
RESULTS REQUIRED (Date): Standard TAT		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)		

FOR LABORATORY USE ONLY:
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Please send SRN ASAP, Please forward QC200 Eurofins ASAP and re-iced as appropriate. Please invoice anna.andrzejewski.aecom.com

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		TRH, BTEXN	Asbestos (absence/presence)	pH	Cation Exchange Capacity	Metals	PAHs	VOCs		HOLD
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type/ Code	Total Bottles									
19	BH006_0.0-0.1	Soil	14/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X	X	X	X	X	X	X		
20	BH006_0.2-0.3	Soil	14/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X		X	X	X	X	X		
	Received Extra Sample														
21	BH001_0.0-0.1	Soil	13/1/21												
22	TSC	Soil	11/1/21												

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Pankti Dalal	Date: 27/11/2020	Name: Vishal	Date:	Name: 15/01/2021	Date:	Con' Note No:
Of: AECOM	Time:	Of: ALS	Time:	Of: 1820	Time:	Transport Co: Express courier

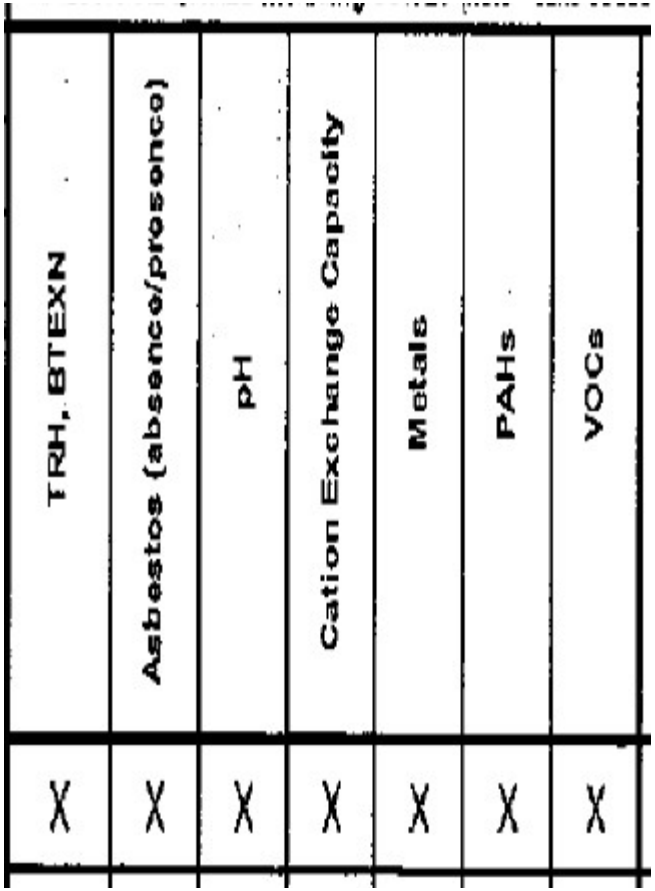
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate 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. **Soil Container Codes:** Jar = Unpreserved glass jar

Helen Simpson

From: Holt, Kate <Kate.Holt@aecom.com>
Sent: Tuesday, 19 January 2021 2:39 PM
To: Helen Simpson
Cc: Dalal, Pankti
Subject: [EXTERNAL] - RE: ALS Workorder ES2101586, Client AECOMAU, Project 60619153/2g

Hi Helen

Please analyse BH001_0.0-0.1 for the below analysis



TRH, BTEXN	Asbestos (absence/presence)	pH	Cation Exchange Capacity	Metals	PAHs	VOCs
X	X	X	X	X	X	X

Do you have sufficient volume to sub-sample for asbestos (absence/presence) from the jar for Tank_0.0-0.1?

Thanks,

Kate Holt
Principal Environmental Scientist
M +61 400 849 797
Kate.Holt@aecom.com

AECOM
Level 21, 420 George Street, Sydney, NSW 2000
PO Box Q410, QVB PO, Sydney, NSW, 1230
T +61 2 8934 0000 F +61 2 8934 0001
www.aecom.com

From: Helen Simpson <helen.simpson@alsglobal.com>
Sent: Tuesday, 19 January 2021 2:31 PM
To: Holt, Kate <Kate.Holt@aecom.com>; Dalal, Pankti <Pankti.Dalal@aecom.com>
Subject: [EXTERNAL] ALS Workorder ES2101586, Client AECOMAU, Project 60619153/2g

Hi Kae/Pankti,

For this attached COC, please note that we did not receive a separate asbestos bag for sample 8, Tank_0.0-0.1.

Also, we received extra sample BH001_0.0-0.1 which has been placed on hold. Please let me know if it needs to be analysed.

Kind Regards,

Helen Simpson
Sample Admin, Environmental
Sydney

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F +61 2 8784 8500
helen.simpson@alsglobal.com
277-289 Woodpark Road
Smithfield NSW 2164 AUSTRALIA

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

CERTIFICATE OF ANALYSIS 259778

Client Details

Client	AECOM Australia Pty Ltd (Sydney)
Attention	Kate Holt
Address	PO Box Q410, QVB Post Office, Sydney, NSW, 1230

Sample Details

Your Reference	**60619153/2g**
Number of Samples	1 Soil
Date samples received	19/01/2021
Date completed instructions received	19/01/2021

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	25/01/2021
Date of Issue	22/01/2021

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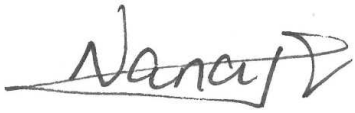
Accredited for compliance with ISO/IEC 17025 - Testing. **Tests not covered by NATA are denoted with ***

Results Approved By
Dragana Tomas, Senior Chemist
Hannah Nguyen, Senior Chemist
Manju Dewendrage, Chemist

Authorised By



Nancy Zhang, Laboratory Manager

VOCs in soil		
Our Reference		259778-1
Your Reference	UNITS	QC200_200113
Date Sampled		13/01/2021
Type of sample		Soil
Date extracted	-	20/01/2021
Date analysed	-	20/01/2021
Dichlorodifluoromethane	mg/kg	<1
Chloromethane	mg/kg	<1
Vinyl Chloride	mg/kg	<1
Bromomethane	mg/kg	<1
Chloroethane	mg/kg	<1
Trichlorofluoromethane	mg/kg	<1
1,1-Dichloroethene	mg/kg	<1
trans-1,2-dichloroethene	mg/kg	<1
1,1-dichloroethane	mg/kg	<1
cis-1,2-dichloroethene	mg/kg	<1
bromochloromethane	mg/kg	<1
chloroform	mg/kg	<1
2,2-dichloropropane	mg/kg	<1
1,2-dichloroethane	mg/kg	<1
1,1,1-trichloroethane	mg/kg	<1
1,1-dichloropropene	mg/kg	<1
Cyclohexane	mg/kg	<1
carbon tetrachloride	mg/kg	<1
Benzene	mg/kg	<0.2
dibromomethane	mg/kg	<1
1,2-dichloropropane	mg/kg	<1
trichloroethene	mg/kg	<1
bromodichloromethane	mg/kg	<1
trans-1,3-dichloropropene	mg/kg	<1
cis-1,3-dichloropropene	mg/kg	<1
1,1,2-trichloroethane	mg/kg	<1
Toluene	mg/kg	<0.5
1,3-dichloropropane	mg/kg	<1
dibromochloromethane	mg/kg	<1
1,2-dibromoethane	mg/kg	<1
tetrachloroethene	mg/kg	<1
1,1,1,2-tetrachloroethane	mg/kg	<1
chlorobenzene	mg/kg	<1
Ethylbenzene	mg/kg	<1

VOCs in soil		
Our Reference		259778-1
Your Reference	UNITS	QC200_200113
Date Sampled		13/01/2021
Type of sample		Soil
bromoform	mg/kg	<1
m+p-xylene	mg/kg	<2
styrene	mg/kg	<1
1,1,2,2-tetrachloroethane	mg/kg	<1
o-Xylene	mg/kg	<1
1,2,3-trichloropropane	mg/kg	<1
isopropylbenzene	mg/kg	<1
bromobenzene	mg/kg	<1
n-propyl benzene	mg/kg	<1
2-chlorotoluene	mg/kg	<1
4-chlorotoluene	mg/kg	<1
1,3,5-trimethyl benzene	mg/kg	<1
tert-butyl benzene	mg/kg	<1
1,2,4-trimethyl benzene	mg/kg	<1
1,3-dichlorobenzene	mg/kg	<1
sec-butyl benzene	mg/kg	<1
1,4-dichlorobenzene	mg/kg	<1
4-isopropyl toluene	mg/kg	<1
1,2-dichlorobenzene	mg/kg	<1
n-butyl benzene	mg/kg	<1
1,2-dibromo-3-chloropropane	mg/kg	<1
1,2,4-trichlorobenzene	mg/kg	<1
hexachlorobutadiene	mg/kg	<1
1,2,3-trichlorobenzene	mg/kg	<1
Surrogate Dibromofluorometha	%	95
Surrogate aaa-Trifluorotoluene	%	92
Surrogate Toluene-d_8	%	117
Surrogate 4-Bromofluorobenzene	%	99

vTRH(C6-C10)/BTEXN in Soil		
Our Reference		259778-1
Your Reference	UNITS	QC200_200113
Date Sampled		13/01/2021
Type of sample		Soil
Date extracted	-	20/01/2021
Date analysed	-	20/01/2021
TRH C_6 - C_9	mg/kg	<25
TRH C_6 - C_{10}	mg/kg	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
naphthalene	mg/kg	<1
Total +ve Xylenes	mg/kg	<3
Surrogate aaa-Trifluorotoluene	%	92

svTRH (C10-C40) in Soil		
Our Reference		259778-1
Your Reference	UNITS	QC200_200113
Date Sampled		13/01/2021
Type of sample		Soil
Date extracted	-	20/01/2021
Date analysed	-	20/01/2021
TRH C_{10} - C_{14}	mg/kg	<50
TRH C_{15} - C_{28}	mg/kg	<100
TRH C_{29} - C_{36}	mg/kg	<100
TRH >C_{10} -C_{16}	mg/kg	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50
TRH >C_{16} -C_{34}	mg/kg	<100
TRH >C_{34} -C_{40}	mg/kg	<100
Total +ve TRH (>C10-C40)	mg/kg	<50
Surrogate o-Terphenyl	%	87

PAHs in Soil		
Our Reference		259778-1
Your Reference	UNITS	QC200_200113
Date Sampled		13/01/2021
Type of sample		Soil
Date extracted	-	20/01/2021
Date analysed	-	22/01/2021
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	<0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	<0.1
Pyrene	mg/kg	<0.1
Benzo(a)anthracene	mg/kg	<0.1
Chrysene	mg/kg	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Total +ve PAH's	mg/kg	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5
Surrogate p-Terphenyl-d14	%	94

Acid Extractable metals in soil		
Our Reference		259778-1
Your Reference	UNITS	QC200_200113
Date Sampled		13/01/2021
Type of sample		Soil
Date prepared	-	20/01/2021
Date analysed	-	20/01/2021
Arsenic	mg/kg	6
Cadmium	mg/kg	<0.4
Chromium	mg/kg	13
Copper	mg/kg	15
Lead	mg/kg	7
Mercury	mg/kg	<0.1
Nickel	mg/kg	9
Zinc	mg/kg	22

Moisture		
Our Reference		259778-1
Your Reference	UNITS	QC200_200113
Date Sampled		13/01/2021
Type of sample		Soil
Date prepared	-	20/01/2021
Date analysed	-	21/01/2021
Moisture	%	20

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-020	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-022/025	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

Method ID	Methodology Summary
Org-023	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	259778-1
Date extracted	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
Date analysed	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
Dichlorodifluoromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Vinyl Chloride	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Bromomethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Trichlorofluoromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-Dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trans-1,2-dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1-dichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	81	102
cis-1,2-dichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromochloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chloroform	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	83	101
2,2-dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	80	100
1,1,1-trichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	75	95
1,1-dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Cyclohexane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
carbon tetrachloride	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromomethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
trichloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	84	101
bromodichloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	103	124
trans-1,3-dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
cis-1,3-dichloropropene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2-trichloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
dibromochloromethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	107	128
1,2-dibromoethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tetrachloroethene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	96	113
1,1,1,2-tetrachloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
chlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromoform	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
styrene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]

QUALITY CONTROL: VOCs in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	259778-1
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
isopropylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
bromobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-propyl benzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
2-chlorotoluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-chlorotoluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3,5-trimethyl benzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
tert-butyl benzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trimethyl benzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,3-dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
sec-butyl benzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,4-dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
4-isopropyl toluene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
n-butyl benzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,4-trichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
hexachlorobutadiene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
1,2,3-trichlorobenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate Dibromofluorometha	%		Org-023	104	[NT]	[NT]	[NT]	[NT]	123	104
Surrogate aaa-Trifluorotoluene	%		Org-023	86	[NT]	[NT]	[NT]	[NT]	93	110
Surrogate Toluene-d_8	%		Org-023	101	[NT]	[NT]	[NT]	[NT]	119	102
Surrogate 4-Bromofluorobenzene	%		Org-023	99	[NT]	[NT]	[NT]	[NT]	110	100

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	259778-1
Date extracted	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
Date analysed	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
TRH C_6 - C_9	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	88	111
TRH C_6 - C_{10}	mg/kg	25	Org-023	<25	[NT]	[NT]	[NT]	[NT]	88	111
Benzene	mg/kg	0.2	Org-023	<0.2	[NT]	[NT]	[NT]	[NT]	83	105
Toluene	mg/kg	0.5	Org-023	<0.5	[NT]	[NT]	[NT]	[NT]	92	112
Ethylbenzene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	93	119
m+p-xylene	mg/kg	2	Org-023	<2	[NT]	[NT]	[NT]	[NT]	87	110
o-Xylene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	90	115
naphthalene	mg/kg	1	Org-023	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-023	86	[NT]	[NT]	[NT]	[NT]	93	110

QUALITY CONTROL: svTRH (C10-C40) in Soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	259778-1
Date extracted	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
Date analysed	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
TRH C_{10} - C_{14}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	114	108
TRH C_{15} - C_{28}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	90	85
TRH C_{29} - C_{36}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	92	79
TRH >C_{10} -C_{16}	mg/kg	50	Org-020	<50	[NT]	[NT]	[NT]	[NT]	114	108
TRH >C_{16} -C_{34}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	90	85
TRH >C_{34} -C_{40}	mg/kg	100	Org-020	<100	[NT]	[NT]	[NT]	[NT]	92	79
Surrogate o-Terphenyl	%		Org-020	92	[NT]	[NT]	[NT]	[NT]	88	85

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	259778-1
Date extracted	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
Date analysed	-			22/01/2021	[NT]	[NT]	[NT]	[NT]	22/01/2021	22/01/2021
Naphthalene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	95	110
Acenaphthylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	107
Fluorene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	105	118
Phenanthrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	99	117
Anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	104	112
Pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	101	109
Benzo(a)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	135	129
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-022/025	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-022/025	<0.05	[NT]	[NT]	[NT]	[NT]	107	103
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-022/025	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-022/025	101	[NT]	[NT]	[NT]	[NT]	101	115

QUALITY CONTROL: Acid Extractable metals in soil					Duplicate				Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-4	259778-1
Date prepared	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
Date analysed	-			20/01/2021	[NT]	[NT]	[NT]	[NT]	20/01/2021	20/01/2021
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	100	102
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	97	74
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	99	87
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	100	110
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	97	78
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	107	107
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	98	77
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	96	72

Result Definitions

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

Quality Control Definitions

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

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

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

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

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

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

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

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

SAMPLE RECEIPT ADVICE

Client Details

Client	AECOM Australia Pty Ltd (Sydney)
Attention	Kate Holt

Sample Login Details

Your reference	60619153/2g
Envirolab Reference	259778
Date Sample Received	19/01/2021
Date Instructions Received	19/01/2021
Date Results Expected to be Reported	27/01/2021

Sample Condition

Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Soil
Turnaround Time Requested	Standard
Temperature on Receipt (°C)	17.1
Cooling Method	Ice
Sampling Date Provided	YES

Comments

Nil

Please direct any queries to:

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

Analysis Underway, details on the following page:

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

Sample ID	VOCs in soil	vTRH(C6-C10)/BTEXN in Soil	svTRH (C10-C40) in Soil	PAHs in Soil	Acid Extractable metalsin soil
QC200_200113	✓	✓	✓	✓	✓

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

Additional Info

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

Generic Chain of Custody Form

Q4AN(E

SCA0581

CLIENT: AECOM	ADDRESS: Level 21, 420 George Street, Sydney	SAMPLER: Pankti Dalal	Destination Laboratory
PROJECT MANAGER (PM): Kate Holt	SITE: AGL BESS BH	MOBILE: M +61 488 213 287 PHONE:	ALS
PURCHASE ORDER NUMBER & TASK CODE: 60619153/2g	P.O. NO.:	EMAIL REPORT TO: pankti.dalal@aecom.com, kate.holt@aecom.com	
TURNAROUND REQUIRED (Date): Standard TAT		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes 10.2 No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Please send SRN ASAP, Please forward QC200 Eurofins ASAP and re-iced as appropriate. Please invoice anna.andrzejewski.aecom.com

ALS ID	SAMPLE ID	MATRIX	DATE	Time	CONTAINER INFORMATION Type/ Code	Total Bottles	TRH, BTEXN	TRH C6-C9, BTEXN	BTEXN	Asbestos (absence/presence)	pH	Cation Exchange Capacity	Metals	PAHs	VOCs	HOLD	
1	QC300_210112	Water	12/01/2021		2 x vials, 1 x preserved metals, 1 x amber	4	X						X				Rinsate
2	QC301_210113	Water	13/01/2021		2 x vials, 1 x preserved metals, 1 x amber	4	X						X				Rinsate
3	QC302_210114	Water	14/01/2021		2 x vials, 1 x preserved metals, 1 x amber	4	X						X				Rinsate
4	QC200_200113	Soil	13/01/2021		1 x soil jar (glass)	1	X						X	X	X		Please forward to Envirolab ASAP
5	QC100_200112	Soil	12/01/2021		1 x soil jar (glass)	1	X						X	X	X		
6	QC400_200114	Soil	14/01/2021		1 x soil jar (glass)	1		X									Trip Blank
7	QC500_200114	Soil	14/01/2021		1 x soil jar (glass)	1			X								Trip Spike
8	Fragment_200114	Soil	14/01/2021		1 x ACM Bag	1				X							Potential ACM Fragment grab sample
9	Tank_0.0-0.1	Soil	14/01/2021		1 x soil jar (glass)	1	X			X	X	X	X	X	X		
10	Tank_0.1-0.2	Soil	14/01/2021		1 x soil jar (glass)	1	X				X	X	X	X	X		
11	Tank_0.2-0.3	Soil	14/01/2021		1 x soil jar (glass)	1	X				X	X	X	X	X		
12	Tank_0.3-0.4	Soil	14/01/2021		1 x soil jar (glass)	1	X				X	X	X	X	X		
13	BH003_0.0-0.1	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X			X	X	X	X	X	X		
14	BH003_0.5-0.6	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X				X	X	X	X	X		
15	BH003_0.7-0.8	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X				X	X	X	X	X		
16	BH002_0.0-0.3	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X			X	X	X	X	X	X		
17	BH004_0.0-0.3	Soil	12/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X			X	X	X	X	X	X		
18	BH005_0.0-0.1	Soil	13/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X			X	X	X	X	X	X		
19	BH005_0.4-0.5	Soil	13/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X				X	X	X	X	X		

RELINQUISHED BY		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT
Name: Pankti Dalal	Date: 27/11/2020	Name: Vishal Patel	Date: 15/01/2021	Name: C. Mulleyn	Date: 19/1/21	Con' Note No:
Of: AECOM	Time:	Of: ALS	Time: 1820	Of: ALS SMGT	Time: 1500	Transport Co: Express courier

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. Soil Container Co

ENVIROLAB

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

Job No: 259778
Date Received: 19/1/21
Time Received: 1500
Received By: CM
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Environmental Division
Sydney
Work Order Reference
ES2101586

Telephone : + 61-2-8784 8555

581

AECOM

ANZ

FQM - Generic Chain of Custody Form

254778

Q4AN(EV)-007-FM1

CONSULTANT: AECOM	ADDRESS: Level 21, 420 George Street, Sydney	SAMPLER: Pankti Dalal	Destination Laboratory
PROJECT MANAGER (PM): Kate Holt	SITE: AGL BESS BH	MOBILE: M +61 488 213 287	PHONE: ALS
PROJECT NUMBER & TASK CODE: 60619153/2g	P.O. NO.:	EMAIL REPORT TO: pankti.dalal@aecom.com, kate.holt@aecom.com	
RESULTS REQUIRED (Date): Standard TAT		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

Please send SRN ASAP, Please forward QC200 Eurofins ASAP and re-iced as appropriate. Please invoice anna.andrzejewski.aecom.com

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		TRH, BTEXN	Asbestos (absence/presence)	pH	Cation Exchange Capacity	Metals	PAHs	VOCs		HOLD	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type/ Code	Total Bottles										
19	BH006_0.0-0.1	Soil	14/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X	X	X	X	X	X	X			
20	BH006_0.2-0.3	Soil	14/01/2021		1 x soil jar (glass), 1 x small ACM bag	2	X		X	X	X	X	X			
	Received extra sample															
21	BH001_00-0.1	Soil	13/1/21													
22	TSC	Soil	11/1/21													

RELINQUISHED BY:			RECEIVED BY			RECEIVED BY			METHOD OF SHIPMENT
Name: Pankti Dalal	Date: 27/11/2020		Name: Vishal	Date:		Name: Isolizuzi	Date:		Con' Note No:
Of: AECOM	Time:		Of: AGL	Time:		Of: 1620	Time:		Transport Co: Express courier

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. Soil Container Codes: Jar = Unpreserved glass jar

Appendix H

Soil Analytical Results Tables

Table T1
Soil Analytical Results
Human Health Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

							Field_ID	BH001_0.0-0.1	BH002_0.0-0.3	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8	BH004_0.0-0.3	QC100_200112	BH005_0.0-0.1	BH005_0.4-0.5	QC200_200113
							Location_Code	BH001	BH002	BH003	BH003	BH003	BH004	BH004	BH005	BH005	BH005
							Sample_Depth_Range	0-0.1	0-0.3	0-0.1	0.5-0.6	0.7-0.8	0-0.3	0-0.3	0-0.1	0.4-0.5	0.4-0.5
							Sampled_Date_Time	13/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	13/01/2021	13/01/2021	13/01/2021
							Matrix_Type	soil	soil	soil	soil	soil	soil	soil	soil	soil	soil
							Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	259778
Chem_Group	**ChemName**	**output unit**	**LOR**	CRC Care 2011 Table B4 Com/Ind D Soil HSL Direct Contact	NEPM 2013 HSL D vap int sand: 0-1m **0-1m**	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil												
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1					8.7	8.5	8.4	8.7	8.6	9.1	-	8.8	8.6	-
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1					-	-	-	-	-	-	-	-	-	<1
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10					<10	<10	<10	<10	<10	<10	<10	<10	<10	<25
	C10-C14 fraction	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15-C28 fraction	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29-C36 fraction	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C10-C36 fraction (sum)	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	<50	<50	-
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10				800	<10	<10	<10	<10	<10	<10	<10	<10	<10	<25
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10	**26000**	66.6			<10	<10	<10	<10	<10	<10	<10	<10	<10	<25
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	**20000**	137			<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	>C10-C16 fraction	mg/kg	50				1000	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	>C16-C34 fraction	mg/kg	100	**27000**			5000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34-C40 fraction	mg/kg	100	**38000**			10000	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10-C40 fraction (sum)	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	**430**	3			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	mg/kg	0.5	**99000**				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Ethylbenzene	mg/kg	0.5	**27000**				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	m&p-Xylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2
	o-Xylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Total Xylenes	mg/kg	0.5	**81000**				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<3
	Styrene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Isopropylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	n-butylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	n-propylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	p-isopropyltoluene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	sec-butylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	tert-butylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,2,4-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,3,5-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Total BTEX	mg/kg	0.2					<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Naphthalene	Naphthalene (VOC)	mg/kg	1	**11000**				<1	<1	<1	<1	<1	<1	<1	<1	<1	-
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5			40		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	<0.5
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5			40		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5			40		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	<0.5
	Total Positive PAHs	mg/kg	0.05					-	-	-	-	-	-	-	-	-	<0.05
	Naphthalene	mg/kg	0.5		12.1			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Acenaphthylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Acenaphthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Anthracene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Fluorene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Phenanthrene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Fluoranthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Benz(a)anthracene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Benzo(k)fluoranthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	Benzo(b&j)fluoranthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-	-	-	-	-	-	-	-	-	<0.2
	Benzo(a)pyrene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05
	Chrysene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Pyrene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Benzo(g,h,i)perylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Dibenz(a,h)anthracene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.1
	Sum of PAHs	mg/kg	0.5			4000		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Metals	Arsenic	mg/kg	5			3000		6	6	<5	6	6	6	5	5	<5	6
	Cadmium	mg/kg	1			900		<1	<1	<1	<1	<1	<1	<1	<1	<1	<0.4
	Chromium	mg/kg	2					18	17	12	11	13	16	16	12	11	13
	Copper	mg/kg	5			240000		21	17	15	14	16	18	17	15	13	15
	Lead	mg/kg	5			1500		20	15	13	6	12	10	9	82	6	7
	Mercury	mg/kg	0.1			730		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Nickel	mg/kg	2			6000		11	12	9	8	10	12	12	9	9	9
	Zinc	mg/kg	5			400000		54	37	35	22	36	32	30	190	21	22
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Chlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	2-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	4-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1

Table T1
Soil Analytical Results
Human Health Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

Chem_Group	ChemName	output unit	LOR	CRC Care 2011 Table B4 Com/Ind D Soil HSL Direct Contact	NEPM 2013 HSL D vap int sand: 0-1m **0-1m**	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil	BH001_0.0-0.1	BH002_0.0-0.3	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8	BH004_0.0-0.3	QC100_200112	BH005_0.0-0.1	BH005_0.4-0.5	QC200_200113
Field_ID								BH001_0.0-0.1	BH002_0.0-0.3	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8	BH004_0.0-0.3	QC100_200112	BH005_0.0-0.1	BH005_0.4-0.5	QC200_200113
Location_Code								BH001	BH002	BH003	BH003	BH003	BH004	BH004	BH005	BH005	BH005
Sample_Depth_Range								0-0.1	0-0.3	0-0.1	0.5-0.6	0.7-0.8	0-0.3	0-0.3	0-0.1	0.4-0.5	0.4-0.5
Sampled_Date_Time								13/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	13/01/2021	13/01/2021	13/01/2021
Matrix_Type								soil	soil	soil	soil	soil	soil	soil	soil	soil	soil
Lab_Report_Number								ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	259778
	1,2-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,3-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,4-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,2,3-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,2,4-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1					-	-	-	-	-	-	-	-	-	<1
	Dichlorodifluoromethane (Freon 12)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	<1
	Chloromethane	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	<1
	Vinyl chloride	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	<1
	Bromomethane	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	<1
	Chloroethane	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	<1
	Trichlorofluoromethane (Freon 11)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	<1
	1,1-Dichloroethene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Iodomethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	1,1-Dichloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	cis-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	trans-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,1,1-Trichloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,1-Dichloropropene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Carbon Tetrachloride	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,2-Dichloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Trichloroethene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Dibromomethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,1,2-Trichloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,3-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Tetrachloroethene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,1,1,2-Tetrachloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	trans-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	cis-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	1,1,2,2-Tetrachloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,2,3-Trichloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Pentachloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	1,2-Dibromo-3-chloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Hexachlorobutadiene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	1,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	2,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	cis-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	trans-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Trihalomethanes	Bromodichloromethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Bromoform	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Chloroform	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Dibromochloromethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
Physico-Chemical Parameters	Moisture Content	%	1					16.2	11.5	8	14.8	12.1	17.6	17.2	9.9	17.6	20
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2					<0.2	<0.2	<0.2	8.3	6.6	3.8	-	<0.2	7	-
	Cation Exchange Capacity	meq/100g	0.2					9	13.8	7.2	13.2	11.9	14.7	-	8	11.7	-
	Exchangeable Calcium	meq/100g	0.2					8	12	6.7	8.8	8.3	11.2	-	6.4	8.5	-
	Exchangeable Magnesium	meq/100g	0.2					0.6	0.6	<0.2	3.3	2.8	1.9	-	0.9	2.4	-
	Exchangeable Potassium	meq/100g	0.2					0.4	1.2	0.5	<0.2	<0.2	1	-	0.7	<0.2	-
	Exchangeable Sodium	meq/100g	0.2					<0.2	<0.2	<0.2	1.1	0.8	0.6	-	<0.2	0.8	-
Oxygenated Compounds	Vinyl acetate	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	-
	2-Butanone (MEK)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	-
	2-hexanone (MBK)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	-
	4-Methyl-2-pentanone (MIBK)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5	<5	-
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
Asbestos	APPROVED IDENTIFIER:	-						-	-	-	-	-	-	-	-	-	-
	Asbestos fibres	-	0.1					0	0	0	-	-	0	-	0	-	-
	Asbestos Type	-						Not Detected	Not Detected	Not Detected	-	-	Not Detected	-	Not Detected	-	-
	Organic Fibre	g/kg	0.1					0	0	0	-	-	0	-	0	-	-
	Asbestos (Trace)	Fibres	5					0	0	0	-	-	0	-	0	-	-
	Synthetic Mineral Fibre	g/kg	0.1					0	0	0	-	-	0	-	0	-	-

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							Field_ID	BH006_0.0-0.1	BH006_0.2-0.3	Fragment_200114_200114	Tank_0.0-0.1	Tank_0.1-0.2	Tank_0.2-0.3	Tank_0.3-0.4	**Statistical Summary**			
							Location_Code	BH006	BH006	Fragment	Tank	Tank	Tank	Tank				
							Sample_Depth_Range	0-0.1	0.2-0.3		0-0.1	0.1-0.2	0.2-0.3	0.3-0.4				
							Sampled_Date_Time	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021				
							Matrix_Type	soil	soil	Solid	soil	soil	soil	soil				
							Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586				
Chem_Group	**ChemName**	**output unit**	**LOR**	CRC Care 2011 Table B4 Com/Ind D Soil HSL Direct Contact	NEPM 2013 HSL D vap int sand: 0-1m **0-1m**	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil								Number of Results	Number of Detects	Minimum Concentration	Minimum Detect
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1					8.6	8.8	-	8.2	8.3	8.3	8.2	14	14	8.2	8.2
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1					-	-	-	-	-	-	-	1	0	<1	ND
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10					<10	<10	-	<10	<10	<10	<10	16	0	<10	ND
	C10-C14 fraction	mg/kg	50					<50	<50	-	270	440	530	90	16	4	<50	90
	C15-C28 fraction	mg/kg	100					<100	<100	-	40,400	13,200	20,300	3860	16	4	<100	3860
	C29-C36 fraction	mg/kg	100					<100	<100	-	30,600	9130	14,800	2850	16	4	<100	2850
	C10-C36 fraction (sum)	mg/kg	50					<50	<50	-	71,300	22,800	35,600	6800	15	4	<50	6800
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10				800	<10	<10	-	<10	<10	<10	<10	16	0	<10	ND
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10	**26000**	66.6			<10	<10	-	<10	<10	<10	<10	16	0	<10	ND
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	**20000**	137			<50	<50	-	1240	1320	1560	360	16	4	<50	360
	>C10-C16 fraction	mg/kg	50				1000	<50	<50	-	1240	1320	1560	360	16	4	<50	360
	>C16-C34 fraction	mg/kg	100	**27000**			5000	<100	<100	-	**63,600**	19,600	**30,900**	5900	16	4	<100	5900
	>C34-C40 fraction	mg/kg	100	**38000**			10000	<100	<100	-	12,500	3580	6230	1150	16	4	<100	1150
	>C10-C40 fraction (sum)	mg/kg	50					<50	<50	-	77,300	24,500	38,700	7410	16	4	<50	7410
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	**430**	3			<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	16	0	<0.2	ND
	Toluene	mg/kg	0.5	**99000**				<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Ethylbenzene	mg/kg	0.5	**27000**				<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	m&p-Xylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	o-Xylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Total Xylenes	mg/kg	0.5	**81000**				<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Styrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Isopropylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	n-butylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	n-propylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	p-isopropyltoluene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	sec-butylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	tert-butylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,2,4-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,3,5-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Total BTEX	mg/kg	0.2					<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	15	0	<0.2	ND
Naphthalene	Naphthalene (VOC)	mg/kg	1	**11000**				<1	<1	-	<1	<1	<1	<1	15	0	<1	ND
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5			40		0.6	0.6	-	0.6	0.6	0.6	0.6	16	15	<0.5	0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5			40		<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5			40		1.2	1.2	-	1.2	1.2	1.2	1.2	16	15	<0.5	1.2
	Total Positive PAHs	mg/kg	0.05					-	-	-	-	-	-	-	1	0	<0.05	ND
	Naphthalene	mg/kg	0.5		12.1			<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Acenaphthylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Acenaphthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Anthracene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Fluorene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Phenanthrene	mg/kg	0.5					<0.5	<0.5	-	0.5	<0.5	<0.5	<0.5	16	1	<0.1	0.5
	Fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Benz(a)anthracene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Benzo(k)fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND
	Benzo(b&j)fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-	-	-	-	-	-	-	1	0	<0.2	ND
	Benzo(a)pyrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.05	ND
	Chrysene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Pyrene	mg/kg	0.5					<0.5	<0.5	-	1.6	0.5	0.9	<0.5	16	3	<0.1	0.5
	Benzo(g,h,i)perylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Dibenz(a,h)anthracene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND
	Sum of PAHs	mg/kg	0.5			4000		<0.5	<0.5	-	2.1	0.5	0.9	<0.5	15	3	<0.5	0.5
Metals	Arsenic	mg/kg	5			3000		7	8	-	<5	<5	<5	<5	16	10	<5	5
	Cadmium	mg/kg	1			900		<1	<1	-	<1	<1	<1	<1	16	0	<0.4	ND
	Chromium	mg/kg	2					10	14	-	12	12	14	10	16	16	10	10
	Copper	mg/kg	5			240000		21	27	-	16	14	18	12	16	16	12	12
	Lead	mg/kg	5			1500		30	88	-	50	13	11	8	16	16	6	6
	Mercury	mg/kg	0.1			730		<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	16	0	<0.1	ND
	Nickel	mg/kg	2			6000		11	14	-	9	9	11	8	16	16	8	8
	Zinc	mg/kg	5			400000		62	254	-	345	48	53	38	16	16	21	21
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Chlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	2-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	4-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND

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							Field_ID	BH006_0.0-0.1	BH006_0.2-0.3	Fragment_200114_200114	Tank_0.0-0.1	Tank_0.1-0.2	Tank_0.2-0.3	Tank_0.3-0.4				
							Location_Code	BH006	BH006	Fragment	Tank	Tank	Tank	Tank				
							Sample_Depth_Range	0-0.1	0.2-0.3		0-0.1	0.1-0.2	0.2-0.3	0.3-0.4				
							Sampled_Date_Time	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021				
							Matrix_Type	soil	soil	Solid	soil	soil	soil	soil				
							Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	**Statistical Summary**			
Chem_Group	**ChemName**	**output unit**	**LOR**	CRC Care 2011 Table B4 Com/Ind D Soil HSL Direct Contact	NEPM 2013 HSL D vap int sand: 0-1m **0-1m**	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil								Number of Results	Number of Detects	Minimum Concentration	Minimum Detect
	1,2-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,3-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,4-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,2,3-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,2,4-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1					-	-	-	-	-	-	-	1	0	<1	ND
	Dichlorodifluoromethane (Freon 12)	mg/kg	5					<5	<5	-	<5	<5	<5	<5	16	0	<1	ND
	Chloromethane	mg/kg	5					<5	<5	-	<5	<5	<5	<5	16	0	<1	ND
	Vinyl chloride	mg/kg	5					<5	<5	-	<5	<5	<5	<5	16	0	<1	ND
	Bromomethane	mg/kg	5					<5	<5	-	<5	<5	<5	<5	16	0	<1	ND
	Chloroethane	mg/kg	5					<5	<5	-	<5	<5	<5	<5	16	0	<1	ND
	Trichlorofluoromethane (Freon 11)	mg/kg	5					<5	<5	-	<5	<5	<5	<5	16	0	<1	ND
	1,1-Dichloroethene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Iodomethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND
	1,1-Dichloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	cis-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	trans-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,1,1-Trichloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,1-Dichloropropene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Carbon Tetrachloride	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,2-Dichloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Trichloroethene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Dibromomethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,1,2-Trichloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,3-Dichloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Tetrachloroethene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,1,1,2-Tetrachloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	trans-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND
	cis-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND
	1,1,2,2-Tetrachloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,2,3-Trichloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Pentachloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND
	1,2-Dibromo-3-chloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Hexachlorobutadiene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	1,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	2,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	cis-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	trans-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
Trihalomethanes	Bromodichloromethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Bromoform	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Chloroform	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
	Dibromochloromethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND
Physico-Chemical Parameters	Moisture Content	%	1					10	12.1	-	2.3	22.8	10.8	15.6	16	16	2.3	2.3
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2					5.8	7.8	-	14.9	11.7	13.4	15.2	14	10	<0.2	3.8
	Cation Exchange Capacity	meq/100g	0.2					8.2	7	-	4.3	11.2	12.7	15.6	14	14	4.3	4.3
	Exchangeable Calcium	meq/100g	0.2					5.9	5.3	-	3.1	7	7.6	10.5	14	14	3.1	3.1
	Exchangeable Magnesium	meq/100g	0.2					1.2	1.2	-	0.5	2.4	2.8	2.6	14	13	<0.2	0.5
	Exchangeable Potassium	meq/100g	0.2					0.5	<0.2	-	<0.2	0.6	0.6	<0.2	14	8	<0.2	0.4
	Exchangeable Sodium	meq/100g	0.2					0.5	0.5	-	0.6	1.3	1.7	2.4	14	10	<0.2	0.5
Oxygenated Compounds	Vinyl acetate	mg/kg	5					<5	<5	-	<5	<5	<5	<5	15	0	<5	ND
	2-Butanone (MEK)	mg/kg	5					<5	<5	-	<5	<5	<5	<5	15	0	<5	ND
	2-hexanone (MBK)	mg/kg	5					<5	<5	-	<5	<5	<5	<5	15	0	<5	ND
	4-Methyl-2-pentanone (MIBK)	mg/kg	5					<5	<5	-	<5	<5	<5	<5	15	0	<5	ND
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND
Asbestos	APPROVED IDENTIFIER:	-						-	-	-	-	-	-	-	7	7	99999	ND
	Asbestos fibres	-	0.1					0	-	0	-	-	-	-	7	7	0	ND
	Asbestos Type	-						Not Detected	-	Not Detected	-	-	-	-	0	0	99999	ND
	Organic Fibre	g/kg	0.1					0	-	Detected	-	-	-	-	6	6	0	ND
	Asbestos (Trace)	Fibres	5					0	-	0	-	-	-	-	7	7	0	ND
	Synthetic Mineral Fibre	g/kg	0.1					0	-	0	-	-	-	-	7	7	0	ND

Table T1
Soil Analytical Results
Human Health Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

							Field_ID								
							Location_Code								
							Sample_Depth_Range								
							Sampled_Date_Time								
							Matrix_Type								
							Lab_Report_Number								
Chem_Group	**ChemName**	**output unit**	**LOR**	CRC Care 2011 Table B4 Com/Ind D Soil HSL Direct Contact	NEPM 2013 HSL D vap int sand: 0-1m **0-1m**	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil	Maximum Concentration	Maximum Detect	Average Concentration	Median Concentration	Standard Deviation	Number of Guideline Exceedances	Number of Guideline Exceedances (Detects Only)
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1					9.1	9.1	8.6	8.6	0.26	0	0
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1					<1	ND		0.5		0	0
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10					<25	ND	5.5	5	1.9	0	0
	C10-C14 fraction	mg/kg	50					530	530	102	25	163	0	0
	C15-C28 fraction	mg/kg	100					40400	40400	4898	50	11105	0	0
	C29-C36 fraction	mg/kg	100					30600	30600	3624	50	8314	0	0
	C10-C36 fraction (sum)	mg/kg	50					71300	71300	9118	25	20125	0	0
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10				800	<25	ND	5.5	5	1.9	0	0
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10	**26000**	66.6			<25	ND	5.5	5	1.9	0	0
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	**20000**	137			1560	1560	299	25	543	4	4
	>C10-C16 fraction	mg/kg	50				1000	1560	1560	299	25	543	3	3
	>C16-C34 fraction	mg/kg	100	**27000**			5000	63600	63600	7538	50	17339	4	4
	>C34-C40 fraction	mg/kg	100	**38000**			10000	12500	12500	1504	50	3397	1	1
	>C10-C40 fraction (sum)	mg/kg	50					77300	77300	9263	25	21221	0	0
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	**430**	3			<0.2	ND	0.1	0.1	0	0	0
	Toluene	mg/kg	0.5	**99000**				<0.5	ND	0.25	0.25	0	0	0
	Ethylbenzene	mg/kg	0.5	**27000**				<1	ND	0.27	0.25	0.063	0	0
	m&p-Xylene	mg/kg	0.5					<2	ND	0.3	0.25	0.19	0	0
	o-Xylene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Total Xylenes	mg/kg	0.5	**81000**				<3	ND	0.33	0.25	0.31	0	0
	Styrene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Isopropylbenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	n-butylbenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	n-propylbenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	p-isopropyltoluene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	sec-butylbenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	tert-butylbenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,2,4-trimethylbenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,3,5-trimethylbenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Total BTEX	mg/kg	0.2					<0.2	ND	0.1	0.1	0	0	0
Naphthalene	Naphthalene (VOC)	mg/kg	1	**11000**				<1	ND	0.5	0.5	0	0	0
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5			40		0.6	0.6	0.58	0.6	0.088	0	0
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5			40		<0.5	ND	0.25	0.25	0	0	0
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5			40		1.2	1.2	1.1	1.2	0.24	0	0
	Total Positive PAHs	mg/kg	0.05					<0.05	ND		0.025		0	0
	Naphthalene	mg/kg	0.5		12.1			<0.5	ND	0.24	0.25	0.05	0	0
	Acenaphthylene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Acenaphthene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Anthracene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Fluorene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Phenanthrene	mg/kg	0.5					0.5	0.5	0.25	0.25	0.083	0	0
	Fluoranthene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Benz(a)anthracene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Benzo(k)fluoranthene	mg/kg	0.5					<0.5	ND	0.25	0.25	0	0	0
	Benzo(b&j)fluoranthene	mg/kg	0.5					<0.5	ND	0.25	0.25	0	0	0
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					<0.2	ND		0.1		0	0
	Benzo(a)pyrene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.056	0	0
	Chrysene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Pyrene	mg/kg	0.5					1.6	1.6	0.38	0.25	0.37	0	0
	Benzo(g,h,i)perylene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Dibenz(a,h)anthracene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5					<0.5	ND	0.24	0.25	0.05	0	0
	Sum of PAHs	mg/kg	0.5			4000		2.1	2.1	0.43	0.25	0.49	0	0
Metals	Arsenic	mg/kg	5			3000		8	8	4.8	5.5	1.9	0	0
	Cadmium	mg/kg	1			900		<1	ND	0.48	0.5	0.075	0	0
	Chromium	mg/kg	2					18	18	13	12.5	2.5	0	0
	Copper	mg/kg	5			240000		27	27	17	16	3.7	0	0
	Lead	mg/kg	5			1500		88	88	24	12.5	26	0	0
	Mercury	mg/kg	0.1			730		<0.1	ND	0.05	0.05	0	0	0
	Nickel	mg/kg	2			6000		14	14	10	9.5	1.7	0	0
	Zinc	mg/kg	5			400000		345	345	80	37.5	96	0	0
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Chlorobenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	2-Chlorotoluene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	4-Chlorotoluene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0

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							Field_ID								
							Location_Code								
							Sample_Depth_Range								
							Sampled_Date_Time								
							Matrix_Type								
							Lab_Report_Number								
Chem_Group	**ChemName**	**output unit**	**LOR**	CRC Care 2011 Table B4 Com/Ind D Soil HSL Direct Contact	NEPM 2013 HSL D vap int sand: 0-1m **0-1m**	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Fine Soil	Maximum Concentration	Maximum Detect	Average Concentration	Median Concentration	Standard Deviation	Number of Guideline Exceedances	Number of Guideline Exceedances (Detects Only)
	1,2-Dichlorobenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,3-Dichlorobenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,4-Dichlorobenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,2,3-Trichlorobenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,2,4-Trichlorobenzene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1					<1	ND		0.5		0	0
	Dichlorodifluoromethane (Freon 12)	mg/kg	5					<5	ND	2.4	2.5	0.5	0	0
	Chloromethane	mg/kg	5					<5	ND	2.4	2.5	0.5	0	0
	Vinyl chloride	mg/kg	5					<5	ND	2.4	2.5	0.5	0	0
	Bromomethane	mg/kg	5					<5	ND	2.4	2.5	0.5	0	0
	Chloroethane	mg/kg	5					<5	ND	2.4	2.5	0.5	0	0
	Trichlorofluoromethane (Freon 11)	mg/kg	5					<5	ND	2.4	2.5	0.5	0	0
	1,1-Dichloroethene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Iodomethane	mg/kg	0.5					<0.5	ND	0.25	0.25	0	0	0
	1,1-Dichloroethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	cis-1,2-Dichloroethene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	trans-1,2-Dichloroethene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,1,1-Trichloroethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,1-Dichloropropene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Carbon Tetrachloride	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichloroethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Trichloroethene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Dibromomethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,1,2-Trichloroethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,3-Dichloropropane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Tetrachloroethene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,1,1,2-Tetrachloroethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	trans-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	ND	0.25	0.25	0	0	0
	cis-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	ND	0.25	0.25	0	0	0
	1,1,2,2-Tetrachloroethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,2,3-Trichloropropane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Pentachloroethane	mg/kg	0.5					<0.5	ND	0.25	0.25	0	0	0
	1,2-Dibromo-3-chloropropane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Hexachlorobutadiene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichloropropane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	2,2-Dichloropropane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	cis-1,3-Dichloropropene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	trans-1,3-Dichloropropene	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
Trihalomethanes	Bromodichloromethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Bromoform	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Chloroform	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
	Dibromochloromethane	mg/kg	0.5					<1	ND	0.27	0.25	0.063	0	0
Physico-Chemical Parameters	Moisture Content	%	1					22.8	22.8	14	13.45	5.1	0	0
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2					15.2	15.2	6.8	6.8	5.5	0	0
	Cation Exchange Capacity	meq/100g	0.2					15.6	15.6	11	11.45	3.3	0	0
	Exchangeable Calcium	meq/100g	0.2					12	12	7.8	7.8	2.4	0	0
	Exchangeable Magnesium	meq/100g	0.2					3.3	3.3	1.7	1.55	1.1	0	0
	Exchangeable Potassium	meq/100g	0.2					1.2	1.2	0.44	0.45	0.36	0	0
	Exchangeable Sodium	meq/100g	0.2					2.4	2.4	0.76	0.6	0.67	0	0
Oxygenated Compounds	Vinyl acetate	mg/kg	5					<5	ND	2.5	2.5	0	0	0
	2-Butanone (MEK)	mg/kg	5					<5	ND	2.5	2.5	0	0	0
	2-hexanone (MBK)	mg/kg	5					<5	ND	2.5	2.5	0	0	0
	4-Methyl-2-pentanone (MIBK)	mg/kg	5					<5	ND	2.5	2.5	0	0	0
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5					<0.5	ND	0.25	0.25	0	0	0
Asbestos	APPROVED IDENTIFIER:	-						0	ND				0	0
	Asbestos fibres	-	0.1					0	ND	0	0	0	0	0
	Asbestos Type	-						0	ND				0	0
	Organic Fibre	g/kg	0.1					0	ND	0	0	0	0	0
	Asbestos (Trace)	Fibres	5					0	ND	0	0	0	0	0
	Synthetic Mineral Fibre	g/kg	0.1					0	ND	0	0	0	0	0

Table T2
Soil Analytical Results
Ecological Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

						Field_ID	BH001_0.0-0.1		BH002_0.0-0.3		BH003_0.0-0.1		BH003_0.5-0.6		BH003_0.7-0.8		BH004_0.0-0.3	
						Location_Code	BH001		BH002		BH003		BH003		BH003		BH004	
						Sample_Depth_Range	0-0.1		0-0.3		0-0.1		0.5-0.6		0.7-0.8		0-0.3	
						Sampled_Date_Time	13/01/2021		12/01/2021		12/01/2021		12/01/2021		12/01/2021		12/01/2021	
						Matrix_Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
						Lab_Report_Number	ES2101586		ES2101586		ES2101586		ES2101586		ES2101586		ES2101586	
				NEPM (2013) Generic EILs for Comm/Ind	NEPM (2013) Generic EILs for Comm/Ind	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)	
Chem_Group	**ChemName**	**output unit**	**LOR**	**Aged**	**Fresh**	***0-2m***	**Aged, 35%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**	
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1					8.7		8.5		8.4		8.7		8.6		9.1
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1					-		-		-		-		-		-
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10					<10		<10		<10		<10		<10		<10
	C10-C14 fraction	mg/kg	50					<50		<50		<50		<50		<50		<50
	C15-C28 fraction	mg/kg	100					<100		<100		<100		<100		<100		<100
	C29-C36 fraction	mg/kg	100					<100		<100		<100		<100		<100		<100
	C10-C36 fraction (sum)	mg/kg	50					<50		<50		<50		<50		<50		<50
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10					<10		<10		<10		<10		<10		<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10			*215*		<10		<10		<10		<10		<10		<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50					<50		<50		<50		<50		<50		<50
	>C10-C16 fraction	mg/kg	50			*170*		<50		<50		<50		<50		<50		<50
	>C16-C34 fraction	mg/kg	100			*2500*		<100		<100		<100		<100		<100		<100
	>C34-C40 fraction	mg/kg	100			*6600*		<100		<100		<100		<100		<100		<100
	>C10-C40 fraction (sum)	mg/kg	50					<50		<50		<50		<50		<50		<50
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2			*95*		<0.2		<0.2		<0.2		<0.2		<0.2		<0.2
	Toluene	mg/kg	0.5			*135*		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Ethylbenzene	mg/kg	0.5			*185*		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	m&p-Xylene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	o-Xylene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Total Xylenes	mg/kg	0.5			*95*		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Styrene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Isopropylbenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	n-butylbenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	n-propylbenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	p-isopropyltoluene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	sec-butylbenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	tert-butylbenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,2,4-trimethylbenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,3,5-trimethylbenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Total BTEX	mg/kg	0.2					<0.2		<0.2		<0.2		<0.2		<0.2		<0.2
Naphthalene	Naphthalene (VOC)	mg/kg	1		**370**			<1		<1		<1		<1		<1		<1
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5					0.6		0.6		0.6		0.6		0.6		0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5					1.2		1.2		1.2		1.2		1.2		1.2
	Total Positive PAHs	mg/kg	0.05					-		-		-		-		-		-
	Naphthalene	mg/kg	0.5		**370**			<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Acenaphthylene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Acenaphthene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Anthracene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Fluorene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Phenanthrene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Fluoranthene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Benz(a)anthracene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Benzo(k)fluoranthene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Benzo(b&j)fluoranthene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-		-		-		-		-		-
	Benzo(a)pyrene	mg/kg	0.5			*1.4*		<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Chrysene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Pyrene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Benzo(g,h,i)perylene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Sum of PAHs	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
Metals	Arsenic	mg/kg	5	**160**				6		6		<5		6		6		6
	Cadmium	mg/kg	1					<1		<1		<1		<1		<1		<1
	Chromium	mg/kg	2				**1000**	18	**1100**	17	**1100**	12	**1100**	11	**1100**	13	**1100**	16
	Copper	mg/kg	5				**270**	21	**310**	17	**220**	15	**310**	14	**130**	16	**310**	18
	Lead	mg/kg	5	**1800**				20		15		13		6		12		10
	Mercury	mg/kg	0.1					<0.1		<0.1		<0.1		<0.1		<0.1		<0.1
	Nickel	mg/kg	2	**310**			**230**	11	**360**	12	**140**	9	**350**	8	**45**	10	**380**	12
	Zinc	mg/kg	5				**650**	54	**880**	37	**560**	35	**860**	22	**400**	36	**920**	32
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Chlorobenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	2-Chlorotoluene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	4-Chlorotoluene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,2-Dichlorobenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,3-Dichlorobenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,4-Dichlorobenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,2,3-Trichlorobenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,2,4-Trichlorobenzene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5

Table T2
Soil Analytical Results
Ecological Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

						Field_ID	BH001_0.0-0.1		BH002_0.0-0.3		BH003_0.0-0.1		BH003_0.5-0.6		BH003_0.7-0.8		BH004_0.0-0.3	
						Location_Code	BH001		BH002		BH003		BH003		BH003		BH004	
						Sample_Depth_Range	0-0.1		0-0.3		0-0.1		0.5-0.6		0.7-0.8		0-0.3	
						Sampled_Date_Time	13/01/2021		12/01/2021		12/01/2021		12/01/2021		12/01/2021		12/01/2021	
						Matrix_Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
						Lab_Report_Number	ES2101586		ES2101586		ES2101586		ES2101586		ES2101586		ES2101586	
				NEPM (2013) Generic EILs for Comm/Ind	NEPM (2013) Generic EILs for Comm/Ind	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)	
Chem_Group	**ChemName**	**output unit**	**LOR**	**Aged**	**Fresh**	***0-2m***	**Aged, 35%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**	
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1					-		-		-		-		-		-
	Dichlorodifluoromethane (Freon 12)	mg/kg	5					<5		<5		<5		<5		<5		<5
	Chloromethane	mg/kg	5					<5		<5		<5		<5		<5		<5
	Vinyl chloride	mg/kg	5					<5		<5		<5		<5		<5		<5
	Bromomethane	mg/kg	5					<5		<5		<5		<5		<5		<5
	Chloroethane	mg/kg	5					<5		<5		<5		<5		<5		<5
	Trichlorofluoromethane (Freon 11)	mg/kg	5					<5		<5		<5		<5		<5		<5
	1,1-Dichloroethene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Iodomethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,1-Dichloroethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	cis-1,2-Dichloroethene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	trans-1,2-Dichloroethene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,1,1-Trichloroethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,1-Dichloropropene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Carbon Tetrachloride	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,2-Dichloroethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Trichloroethene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Dibromomethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,1,2-Trichloroethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,3-Dichloropropane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Tetrachloroethene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,1,1,2-Tetrachloroethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	trans-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	cis-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,1,2,2-Tetrachloroethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,2,3-Trichloropropane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Pentachloroethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,2-Dibromo-3-chloropropane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Hexachlorobutadiene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	1,2-Dichloropropane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	2,2-Dichloropropane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	cis-1,3-Dichloropropene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	trans-1,3-Dichloropropene	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
Trihalomethanes	Bromodichloromethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Bromoform	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Chloroform	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Dibromochloromethane	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
Physico-Chemical Parameters	Moisture Content	%	1					16.2		11.5		8		14.8		12.1		17.6
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2					<0.2		<0.2		<0.2		8.3		6.6		3.8
	Cation Exchange Capacity	meq/100g	0.2					9		13.8		7.2		13.2		11.9		14.7
	Exchangeable Calcium	meq/100g	0.2					8		12		6.7		8.8		8.3		11.2
	Exchangeable Magnesium	meq/100g	0.2					0.6		0.6		<0.2		3.3		2.8		1.9
	Exchangeable Potassium	meq/100g	0.2					0.4		1.2		0.5		<0.2		<0.2		1
	Exchangeable Sodium	meq/100g	0.2					<0.2		<0.2		<0.2		1.1		0.8		0.6
Oxygenated Compounds	Vinyl acetate	mg/kg	5					<5		<5		<5		<5		<5		<5
	2-Butanone (MEK)	mg/kg	5					<5		<5		<5		<5		<5		<5
	2-hexanone (MBK)	mg/kg	5					<5		<5		<5		<5		<5		<5
	4-Methyl-2-pentanone (MIBK)	mg/kg	5					<5		<5		<5		<5		<5		<5
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5					<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
Asbestos	APPROVED IDENTIFIER:	-						-		-		-		-		-		-
	Asbestos fibres	-	0.1					0		0		0		-		-		0
	Asbestos Type	-						Not detected		Not detected		Not detected		-		-		Not detected
	Organic Fibre	g/kg	0.1					0		0		0		-		-		0
	Asbestos (Trace)	Fibres	5					0		0		0		-		-		0
	Synthetic Mineral Fibre	g/kg	0.1					0		0		0		-		-		0
Inorganics	Moisture Content (dried @ 103°C)	%	0.1					-		-		-		-		-		-
Un-assigned	weight of sample	g	0.01					80.8		75.8		50.9		-		-		76.9

Table T2
Soil Analytical Results
Ecological Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

						Field_ID	BH001_0.0-0.1	BH005_0.0-0.1		BH005_0.4-0.5		BH006_0.0-0.1		BH006_0.2-0.3		Fragment_200114_200114
						Location_Code	BH001	BH005		BH005		BH006		BH006		Fragment
						Sample_Depth_Range	0-0.1	0-0.1		0.4-0.5		0-0.1		0.2-0.3		
						Sampled_Date_Time	13/01/202	13/01/2021		13/01/2021		14/01/2021		14/01/2021		14/01/2021
						Matrix_Type	SOIL	SOIL		SOIL		SOIL		SOIL		SOLID
						Lab_Report_Number	ES210158	ES2101586		ES2101586		ES2101586		ES2101586		ES2101586
				NEPM (2013) Generic EILs for Comm/Ind	NEPM (2013) Generic EILs for Comm/Ind	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		
Chem_Group	**ChemName**	**output unit**	**LOR**	**Aged**	**Fresh**	***0-2m***	**Aged, 35%clay (chromium only)**	**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1						8.8		8.6		8.6		8.8	-
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1						-		-		-		-	-
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10						<10		<10		<10		<10	-
	C10-C14 fraction	mg/kg	50						<50		<50		<50		<50	-
	C15-C28 fraction	mg/kg	100						<100		<100		<100		<100	-
	C29-C36 fraction	mg/kg	100						<100		<100		<100		<100	-
	C10-C36 fraction (sum)	mg/kg	50						<50		<50		<50		<50	-
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10						<10		<10		<10		<10	-
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10			*215*			<10		<10		<10		<10	-
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50						<50		<50		<50		<50	-
	>C10-C16 fraction	mg/kg	50			*170*			<50		<50		<50		<50	-
	>C16-C34 fraction	mg/kg	100			*2500*			<100		<100		<100		<100	-
	>C34-C40 fraction	mg/kg	100			*6600*			<100		<100		<100		<100	-
	>C10-C40 fraction (sum)	mg/kg	50						<50		<50		<50		<50	-
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2			*95*			<0.2		<0.2		<0.2		<0.2	-
	Toluene	mg/kg	0.5			*135*			<0.5		<0.5		<0.5		<0.5	-
	Ethylbenzene	mg/kg	0.5			*185*			<0.5		<0.5		<0.5		<0.5	-
	m&p-Xylene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	o-Xylene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Total Xylenes	mg/kg	0.5			*95*			<0.5		<0.5		<0.5		<0.5	-
	Styrene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Isopropylbenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	n-butylbenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	n-propylbenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	p-isopropyltoluene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	sec-butylbenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	tert-butylbenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	1,2,4-trimethylbenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	1,3,5-trimethylbenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Total BTEX	mg/kg	0.2						<0.2		<0.2		<0.2		<0.2	-
Naphthalene	Naphthalene (VOC)	mg/kg	1		**370**				<1		<1		<1		<1	-
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5						0.6		0.6		0.6		0.6	-
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5						1.2		1.2		1.2		1.2	-
	Total Positive PAHs	mg/kg	0.05						-		-		-		-	-
	Naphthalene	mg/kg	0.5		**370**				<0.5		<0.5		<0.5		<0.5	-
	Acenaphthylene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Acenaphthene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Anthracene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Fluorene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Phenanthrene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Fluoranthene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Benz(a)anthracene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Benzo(k)fluoranthene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Benzo(b&j)fluoranthene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2						-		-		-		-	-
	Benzo(a)pyrene	mg/kg	0.5			*1.4*			<0.5		<0.5		<0.5		<0.5	-
	Chrysene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Pyrene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Benzo(g,h,i)perylene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Dibenz(a,h)anthracene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5						<0.5		<0.5		<0.5		AGL TO OCNIFRM	-
	Sum of PAHs	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
Metals	Arsenic	mg/kg	5	**160**					5		<5		7		8	-
	Cadmium	mg/kg	1						<1		<1		<1		<1	-
	Chromium	mg/kg	2				**1000**	**1100**	12	**1100**	11	**1100**	10	**1100**	14	-
	Copper	mg/kg	5				**270**	**240**	15	**310**	13	**250**	21	**210**	27	-
	Lead	mg/kg	5	**1800**					82		6		30		88	-
	Mercury	mg/kg	0.1						<0.1		<0.1		<0.1		<0.1	-
	Nickel	mg/kg	2	**310**			**230**	**170**	9	**320**	9	**180**	11	**130**	14	-
	Zinc	mg/kg	5				**650**	**600**	190	**780**	21	**610**	62	**550**	254	-
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	Chlorobenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	2-Chlorotoluene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	4-Chlorotoluene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	1,2-Dichlorobenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	1,3-Dichlorobenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	1,4-Dichlorobenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	1,2,3-Trichlorobenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-
	1,2,4-Trichlorobenzene	mg/kg	0.5						<0.5		<0.5		<0.5		<0.5	-

Table T2
Soil Analytical Results
Ecological Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

							Field_ID	BH001_0.0-0.1		BH005_0.0-0.1		BH005_0.4-0.5		BH006_0.0-0.1		BH006_0.2-0.3	Fragment_200114_200114
							Location_Code	BH001		BH005		BH005		BH006		BH006	Fragment
							Sample_Depth_Range	0-0.1		0-0.1		0.4-0.5		0-0.1		0.2-0.3	
							Sampled_Date_Time	13/01/202		13/01/2021		13/01/2021		14/01/2021		14/01/2021	14/01/2021
							Matrix_Type	SOIL		SOIL		SOIL		SOIL		SOIL	SOLID
							Lab_Report_Number	ES210158		ES2101586		ES2101586		ES2101586		ES2101586	ES2101586
				NEPM (2013) Generic EILs for Comm/Ind	NEPM (2013) Generic EILs for Comm/Ind	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		
Chem_Group	**ChemName**	**output unit**	**LOR**	**Aged**	**Fresh**	***0-2m***	**Aged, 35%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1							-		-		-		-	-
	Dichlorodifluoromethane (Freon 12)	mg/kg	5							<5		<5		<5		<5	-
	Chloromethane	mg/kg	5							<5		<5		<5		<5	-
	Vinyl chloride	mg/kg	5							<5		<5		<5		<5	-
	Bromomethane	mg/kg	5							<5		<5		<5		<5	-
	Chloroethane	mg/kg	5							<5		<5		<5		<5	-
	Trichlorofluoromethane (Freon 11)	mg/kg	5							<5		<5		<5		<5	-
	1,1-Dichloroethene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Iodomethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,1-Dichloroethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	cis-1,2-Dichloroethene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	trans-1,2-Dichloroethene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,1,1-Trichloroethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,1-Dichloropropene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Carbon Tetrachloride	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,2-Dichloroethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Trichloroethene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Dibromomethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,1,2-Trichloroethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,3-Dichloropropane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Tetrachloroethene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,1,1,2-Tetrachloroethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	trans-1,4-Dichloro-2-butene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	cis-1,4-Dichloro-2-butene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,1,2,2-Tetrachloroethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,2,3-Trichloropropane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Pentachloroethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,2-Dibromo-3-chloropropane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Hexachlorobutadiene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	1,2-Dichloropropane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	2,2-Dichloropropane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	cis-1,3-Dichloropropene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	trans-1,3-Dichloropropene	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
Trihalomethanes	Bromodichloromethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Bromoform	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Chloroform	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
	Dibromochloromethane	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
Physico-Chemical Parameters	Moisture Content	%	1							9.9		17.6		10		12.1	-
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2							<0.2		7		5.8		7.8	-
	Cation Exchange Capacity	meq/100g	0.2							8		11.7		8.2		7	-
	Exchangeable Calcium	meq/100g	0.2							6.4		8.5		5.9		5.3	-
	Exchangeable Magnesium	meq/100g	0.2							0.9		2.4		1.2		1.2	-
	Exchangeable Potassium	meq/100g	0.2							0.7		<0.2		0.5		<0.2	-
	Exchangeable Sodium	meq/100g	0.2							<0.2		0.8		0.5		0.5	-
Oxygenated Compounds	Vinyl acetate	mg/kg	5							<5		<5		<5		<5	-
	2-Butanone (MEK)	mg/kg	5							<5		<5		<5		<5	-
	2-hexanone (MBK)	mg/kg	5							<5		<5		<5		<5	-
	4-Methyl-2-pentanone (MIBK)	mg/kg	5							<5		<5		<5		<5	-
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5	-
Asbestos	APPROVED IDENTIFIER:	-								-		-		-		-	-
	Asbestos fibres	-	0.1							0		-		0		-	0
	Asbestos Type	-								Not detected		-		Not detected		-	Not detected
	Organic Fibre	g/kg	0.1							0		-		0		-	1
	Asbestos (Trace)	Fibres	5							0		-		0		-	0
	Synthetic Mineral Fibre	g/kg	0.1							0		-		0		-	0
Inorganics	Moisture Content (dried @ 103°C)	%	0.1							-		-		-		-	-
Un-assigned	weight of sample	g	0.01							55.7		-		81.5		-	57.6

Table T2
Soil Analytical Results
Ecological Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

						Field_ID	BH001_0.0-0.1		QC100_200112		QC200_200113		Tank_0.0-0.1		Tank_0.1-0.2		Tank_0.2-0.3		Tank_0.3-0.4		
						Location_Code	BH001		BH004		BH005		Tank		Tank		Tank		Tank		
						Sample_Depth_Range	0-0.1		0-0.3		0.4-0.5		0-0.1		0.1-0.2		0.2-0.3		0.3-0.4		
						Sampled_Date_Time	13/01/202		12/01/2021		13/01/2021		14/01/2021		14/01/2021		14/01/2021		14/01/2021		
						Matrix_Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		
						Lab_Report_Number	ES210158		ES2101586		259778		ES2101586		ES2101586		ES2101586		ES2101586		
				NEPM (2013) Generic EILs for Comm/Ind	NEPM (2013) Generic EILs for Comm/Ind	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		
Chem_Group	**ChemName**	**output unit**	**LOR**	**Aged**	**Fresh**	***0-2m***	**Aged, 35%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1							-		-		8.2		8.3		8.3		8.2
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1							-		<1		-		-		-		-
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10							<10		<25		<10		<10		<10		<10
	C10-C14 fraction	mg/kg	50							<50		<50		270		440		530		90
	C15-C28 fraction	mg/kg	100							<100		<100		40,400		13,200		20,300		3860
	C29-C36 fraction	mg/kg	100							<100		<100		30,600		9130		14,800		2850
	C10-C36 fraction (sum)	mg/kg	50							<50		-		71,300		22,800		35,600		6800
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10							<10		<25		<10		<10		<10		<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10			*215*				<10		<25		<10		<10		<10		<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50							<50		<50		1240		1320		1560		360
	>C10-C16 fraction	mg/kg	50			*170*				<50		<50		*1240*		*1320*		*1560*		*360*
	>C16-C34 fraction	mg/kg	100			*2500*				<100		<100		*63,600*		*19,600*		*30,900*		*5900*
	>C34-C40 fraction	mg/kg	100			*6600*				<100		<100		*12,500*		3580		6230		1150
	>C10-C40 fraction (sum)	mg/kg	50							<50		<50		77,300		24,500		38,700		7410
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2			*95*				<0.2		<0.2		<0.2		<0.2		<0.2		<0.2
	Toluene	mg/kg	0.5			*135*				<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Ethylbenzene	mg/kg	0.5			*185*				<0.5		<1		<0.5		<0.5		<0.5		<0.5
	m&p-Xylene	mg/kg	0.5							<0.5		<2		<0.5		<0.5		<0.5		<0.5
	o-Xylene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Total Xylenes	mg/kg	0.5			*95*				<0.5		<3		<0.5		<0.5		<0.5		<0.5
	Styrene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Isopropylbenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	n-butylbenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	n-propylbenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	p-isopropyltoluene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	sec-butylbenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	tert-butylbenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,2,4-trimethylbenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,3,5-trimethylbenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Total BTEX	mg/kg	0.2							<0.2		-		<0.2		<0.2		<0.2		<0.2
Naphthalene	Naphthalene (VOC)	mg/kg	1		**370**					<1		-		<1		<1		<1		<1
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5							0.6		<0.5		0.6		0.6		0.6		0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5							<0.5		<0.5		<0.5		<0.5		<0.5		<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5							1.2		<0.5		1.2		1.2		1.2		1.2
	Total Positive PAHs	mg/kg	0.05							-		<0.05		-		-		-		-
	Naphthalene	mg/kg	0.5		**370**					<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Acenaphthylene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Acenaphthene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Anthracene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Fluorene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Phenanthrene	mg/kg	0.5							<0.5		<0.1		0.5		<0.5		<0.5		<0.5
	Fluoranthene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Benz(a)anthracene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Benzo(k)fluoranthene	mg/kg	0.5							<0.5		-		<0.5		<0.5		<0.5		<0.5
	Benzo(b&j)fluoranthene	mg/kg	0.5							<0.5		-		<0.5		<0.5		<0.5		<0.5
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2							-		<0.2		-		-		-		-
	Benzo(a)pyrene	mg/kg	0.5			*1.4*				<0.5		<0.05		<0.5		<0.5		<0.5		<0.5
	Chrysene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Pyrene	mg/kg	0.5							<0.5		<0.1		1.6		0.5		0.9		<0.5
	Benzo(g,h,i)perylene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5							<0.5		<0.1		<0.5		<0.5		<0.5		<0.5
	Sum of PAHs	mg/kg	0.5							<0.5		-		2.1		0.5		0.9		<0.5
Metals	Arsenic	mg/kg	5	**160**						5		6		<5		<5		<5		<5
	Cadmium	mg/kg	1							<1		<0.4		<1		<1		<1		<1
	Chromium	mg/kg	2				**1000**		**1100**	16	**1100**	13	**1100**	12	**1100**	12	**1100**	14	**1100**	10
	Copper	mg/kg	5				**270**		**310**	17	**310**	15	**130**	16	**300**	14	**310**	18	**310**	12
	Lead	mg/kg	5	**1800**						9		7		50		13		11		8
	Mercury	mg/kg	0.1							<0.1		<0.1		<0.1		<0.1		<0.1		<0.1
	Nickel	mg/kg	2	**310**			**230**		**380**	12	**320**	9	**45**	9	**310**	9	**340**	11	**390**	8
	Zinc	mg/kg	5				**650**		**920**	30	**780**	22	**400**	345	**760**	48	**830**	53	**970**	38
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Chlorobenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	2-Chlorotoluene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	4-Chlorotoluene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,2-Dichlorobenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,3-Dichlorobenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,4-Dichlorobenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,2,3-Trichlorobenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,2,4-Trichlorobenzene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5

Table T2
Soil Analytical Results
Ecological Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

						Field_ID	BH001_0.0-0.1		QC100_200112		QC200_200113		Tank_0.0-0.1		Tank_0.1-0.2		Tank_0.2-0.3		Tank_0.3-0.4	
						Location_Code	BH001		BH004		BH005		Tank		Tank		Tank		Tank	
						Sample_Depth_Range	0-0.1		0-0.3		0.4-0.5		0-0.1		0.1-0.2		0.2-0.3		0.3-0.4	
						Sampled_Date_Time	13/01/202		12/01/2021		13/01/2021		14/01/2021		14/01/2021		14/01/2021		14/01/2021	
						Matrix_Type	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
						Lab_Report_Number	ES210158		ES2101586		259778		ES2101586		ES2101586		ES2101586		ES2101586	
				NEPM (2013) Generic EILs for Comm/Ind	NEPM (2013) Generic EILs for Comm/Ind	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)		NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)	
Chem_Group	**ChemName**	**output unit**	**LOR**	**Aged**	**Fresh**	***0-2m***	**Aged, 35%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**		**Aged, 40%clay (chromium only)**	
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1							-		<1		-		-		-		-
	Dichlorodifluoromethane (Freon 12)	mg/kg	5							<5		<1		<5		<5		<5		<5
	Chloromethane	mg/kg	5							<5		<1		<5		<5		<5		<5
	Vinyl chloride	mg/kg	5							<5		<1		<5		<5		<5		<5
	Bromomethane	mg/kg	5							<5		<1		<5		<5		<5		<5
	Chloroethane	mg/kg	5							<5		<1		<5		<5		<5		<5
	Trichlorofluoromethane (Freon 11)	mg/kg	5							<5		<1		<5		<5		<5		<5
	1,1-Dichloroethene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Iodomethane	mg/kg	0.5							<0.5		-		<0.5		<0.5		<0.5		<0.5
	1,1-Dichloroethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	cis-1,2-Dichloroethene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	trans-1,2-Dichloroethene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,1,1-Trichloroethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,1-Dichloropropene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Carbon Tetrachloride	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,2-Dichloroethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Trichloroethene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Dibromomethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,1,2-Trichloroethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,3-Dichloropropane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Tetrachloroethene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,1,1,2-Tetrachloroethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	trans-1,4-Dichloro-2-butene	mg/kg	0.5							<0.5		-		<0.5		<0.5		<0.5		<0.5
	cis-1,4-Dichloro-2-butene	mg/kg	0.5							<0.5		-		<0.5		<0.5		<0.5		<0.5
	1,1,2,2-Tetrachloroethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,2,3-Trichloropropane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Pentachloroethane	mg/kg	0.5							<0.5		-		<0.5		<0.5		<0.5		<0.5
	1,2-Dibromo-3-chloropropane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Hexachlorobutadiene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	1,2-Dichloropropane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	2,2-Dichloropropane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	cis-1,3-Dichloropropene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	trans-1,3-Dichloropropene	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
Trihalomethanes	Bromodichloromethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Bromoform	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Chloroform	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
	Dibromochloromethane	mg/kg	0.5							<0.5		<1		<0.5		<0.5		<0.5		<0.5
Physico-Chemical Parameters	Moisture Content	%	1							17.2		-		2.3		22.8		10.8		15.6
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2							-		-		14.9		11.7		13.4		15.2
	Cation Exchange Capacity	meq/100g	0.2							-		-		4.3		11.2		12.7		15.6
	Exchangeable Calcium	meq/100g	0.2							-		-		3.1		7		7.6		10.5
	Exchangeable Magnesium	meq/100g	0.2							-		-		0.5		2.4		2.8		2.6
	Exchangeable Potassium	meq/100g	0.2							-		-		<0.2		0.6		0.6		<0.2
	Exchangeable Sodium	meq/100g	0.2							-		-		0.6		1.3		1.7		2.4
Oxygenated Compounds	Vinyl acetate	mg/kg	5							<5		-		<5		<5		<5		<5
	2-Butanone (MEK)	mg/kg	5							<5		-		<5		<5		<5		<5
	2-hexanone (MBK)	mg/kg	5							<5		-		<5		<5		<5		<5
	4-Methyl-2-pentanone (MIBK)	mg/kg	5							<5		-		<5		<5		<5		<5
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5							<0.5		-		<0.5		<0.5		<0.5		<0.5
Asbestos	APPROVED IDENTIFIER:	-								-		-		-		-		-		-
	Asbestos fibres	-	0.1							-		-		-		-		-		-
	Asbestos Type	-								-		-		-		-		-		-
	Organic Fibre	g/kg	0.1							-		-		-		-		-		-
	Asbestos (Trace)	Fibres	5							-		-		-		-		-		-
	Synthetic Mineral Fibre	g/kg	0.1							-		-		-		-		-		-
Inorganics	Moisture Content (dried @ 103°C)	%	0.1							-		20		-		-		-		-
Un-assigned	weight of sample	g	0.01							-		-		-		-		-		-

Table T2
Soil Analytical Results
Ecological Assessment
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

Field_ID	BH001_0.0-
Location_Code	BH001
Sample_Depth_Range	0-0.1
Sampled_Date_Time	13/01/202
Matrix_Type	SOIL
Lab_Report_Number	ES210158

				NEPM (2013) Generic EILs for Comm/Ind	NEPM (2013) Generic EILs for Comm/Ind	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)	**Statistical Summary**										
Chem_Group	**ChemName**	**output unit**	**LOR**	**Aged**	**Fresh**	***0-2m***	**Aged, 35% clay (chromium only)**	Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Average Concentration	Median Concentration	Standard Deviation	Number of Guideline Exceedances	Number of Guideline Exceedances (Detects Only)
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1					14	14	8.2	8.2	9.1	9.1	8.6	8.6	0.26	0	0
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1					1	0	<1	ND	<1	ND		0.5		0	0
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10					16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	C10-C14 fraction	mg/kg	50					16	4	<50	90	530	530	102	25	163	0	0
	C15-C28 fraction	mg/kg	100					16	4	<100	3860	40400	40400	4898	50	11105	0	0
	C29-C36 fraction	mg/kg	100					16	4	<100	2850	30600	30600	3624	50	8314	0	0
	C10-C36 fraction (sum)	mg/kg	50					15	4	<50	6800	71300	71300	9118	25	20125	0	0
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10					16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10			*215*		16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50					16	4	<50	360	1560	1560	299	25	543	0	0
	>C10-C16 fraction	mg/kg	50			*170*		16	4	<50	360	1560	1560	299	25	543	4	4
	>C16-C34 fraction	mg/kg	100			*2500*		16	4	<100	5900	63600	63600	7538	50	17339	4	4
	>C34-C40 fraction	mg/kg	100			*6600*		16	4	<100	1150	12500	12500	1504	50	3397	1	1
	>C10-C40 fraction (sum)	mg/kg	50					16	4	<50	7410	77300	77300	9263	25	21221	0	0
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2			*95*		16	0	<0.2	ND	<0.2	ND	0.1	0.1	0	0	0
	Toluene	mg/kg	0.5			*135*		16	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Ethylbenzene	mg/kg	0.5			*185*		16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	m&p-Xylene	mg/kg	0.5					16	0	<0.5	ND	<2	ND	0.3	0.25	0.19	0	0
	o-Xylene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Total Xylenes	mg/kg	0.5			*95*		16	0	<0.5	ND	<3	ND	0.33	0.25	0.31	0	0
	Styrene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Isopropylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	n-butylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	n-propylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	p-isopropyltoluene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	sec-butylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	tert-butylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,4-trimethylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3,5-trimethylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Total BTEX	mg/kg	0.2					15	0	<0.2	ND	<0.2	ND	0.1	0.1	0	0	0
Naphthalene	Naphthalene (VOC)	mg/kg	1		**370**			15	0	<1	ND	<1	ND	0.5	0.5	0	0	0
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5					16	15	<0.5	0.6	0.6	0.6	0.58	0.6	0.088	0	0
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5					16	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5					16	15	<0.5	1.2	1.2	1.2	1.1	1.2	0.24	0	0
	Total Positive PAHs	mg/kg	0.05					1	0	<0.05	ND	<0.05	ND		0.025		0	0
	Naphthalene	mg/kg	0.5		**370**			16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Acenaphthylene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Acenaphthene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Anthracene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Fluorene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Phenanthrene	mg/kg	0.5					16	1	<0.1	0.5	0.5	0.5	0.25	0.25	0.083	0	0
	Fluoranthene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Benz(a)anthracene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Benzo(k)fluoranthene	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(b&j)fluoranthene	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					1	0	<0.2	ND	<0.2	ND		0.1		0	0
	Benzo(a)pyrene	mg/kg	0.5			*1.4*		16	0	<0.05	ND	<0.5	ND	0.24	0.25	0.056	0	0
	Chrysene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Pyrene	mg/kg	0.5					16	3	<0.1	0.5	1.6	1.6	0.38	0.25	0.37	0	0
	Benzo(g,h,i)perylene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Dibenz(a,h)anthracene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5					15	0	<0.1	ND	<0.5	ND	0.24	0.25	0.052	0	0
	Sum of PAHs	mg/kg	0.5					15	3	<0.5	0.5	2.1	2.1	0.43	0.25	0.49	0	0
Metals	Arsenic	mg/kg	5	**160**				16	10	<5	5	8	8	4.8	5.5	1.9	0	0
	Cadmium	mg/kg	1					16	0	<0.4	ND	<1	ND	0.48	0.5	0.075	0	0
	Chromium	mg/kg	2				**1000**	31	31	10	10	1100	1100	539	18	552	0	0
	Copper	mg/kg	5				**270**	31	31	12	12	310	310	136	27	133	0	0
	Lead	mg/kg	5	**1800**				16	16	6	6	88	88	24	12.5	26	0	0
	Mercury	mg/kg	0.1					16	0	<0.1	ND	<0.1	ND	0.05	0.05	0	0	0
	Nickel	mg/kg	2	**310**			**230**	31	31	8	8	390	390	130	14	152	9	9
	Zinc	mg/kg	5				**650**	31	31	21	21	970	970	390	345	357	0	0
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Chlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	2-Chlorotoluene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	4-Chlorotoluene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3-Dichlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,4-Dichlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,3-Trichlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,4-Trichlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0

Table T2
Soil Analytical Results
Ecological Assessment
Broken Hill Energy Storage System
AGL Energy Limited

						Field_ID	BH001_0.0-(											
						Location_Code	BH001											
						Sample_Depth_Range	0-0.1											
						Sampled_Date_Time	13/01/202											
						Matrix_Type	SOIL											
						Lab_Report_Number	ES210158											
				NEPM (2013) Generic EILs for Comm/Ind	NEPM (2013) Generic EILs for Comm/Ind	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Fine Soil	NEPM (2013) Specific EILfor Comm/Ind (calculated using sample specific CEC and pH)	**Statistical Summary**										
Chem_Group	**ChemName**	**output unit**	**LOR**	**Aged**	**Fresh**	***0-2m***	**Aged, 35% clay (chromium only)**	Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Average Concentration	Median Concentration	Standard Deviation	Number of Guideline Exceedances	Number of Guideline Exceedances (Detects Only)
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1					1	0	<1	ND	<1	ND		0.5		0	0
	Dichlorodifluoromethane (Freon 12)	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Chloromethane	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Vinyl chloride	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Bromomethane	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Chloroethane	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Trichlorofluoromethane (Freon 11)	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	1,1-Dichloroethene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Iodomethane	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,1-Dichloroethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	cis-1,2-Dichloroethene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,2-Dichloroethene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,1-Trichloroethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1-Dichloropropene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Carbon Tetrachloride	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichloroethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Trichloroethene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Dibromomethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,2-Trichloroethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3-Dichloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Tetrachloroethene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,1,2-Tetrachloroethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,4-Dichloro-2-butene	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	cis-1,4-Dichloro-2-butene	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,1,2,2-Tetrachloroethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,3-Trichloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Pentachloroethane	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,2-Dibromo-3-chloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Hexachlorobutadiene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	2,2-Dichloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	cis-1,3-Dichloropropene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,3-Dichloropropene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Trihalomethanes	Bromodichloromethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Bromoform	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Chloroform	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Dibromochloromethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Physico-Chemical Parameters	Moisture Content	%	1					15	15	2.3	2.3	22.8	22.8	13	12.1	4.9	0	0
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2					14	10	<0.2	3.8	15.2	15.2	6.8	6.8	5.5	0	0
	Cation Exchange Capacity	meq/100g	0.2					14	14	4.3	4.3	15.6	15.6	11	11.45	3.3	0	0
	Exchangeable Calcium	meq/100g	0.2					14	14	3.1	3.1	12	12	7.8	7.8	2.4	0	0
	Exchangeable Magnesium	meq/100g	0.2					14	13	<0.2	0.5	3.3	3.3	1.7	1.55	1.1	0	0
	Exchangeable Potassium	meq/100g	0.2					14	8	<0.2	0.4	1.2	1.2	0.44	0.45	0.36	0	0
	Exchangeable Sodium	meq/100g	0.2					14	10	<0.2	0.5	2.4	2.4	0.76	0.6	0.67	0	0
Oxygenated Compounds	Vinyl acetate	mg/kg	5					15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	2-Butanone (MEK)	mg/kg	5					15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	2-hexanone (MBK)	mg/kg	5					15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	4-Methyl-2-pentanone (MIBK)	mg/kg	5					15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
Asbestos	APPROVED IDENTIFIER:	-						7	7	99999	ND	0	ND				0	0
	Asbestos fibres	-	0.1					7	7	0	ND	0	ND	0	0	0	0	0
	Asbestos Type	-						0	0	99999	ND	0	ND				0	0
	Organic Fibre	g/kg	0.1					7	7	0	1	1	1	0.14	0	0.38	0	0
	Asbestos (Trace)	Fibres	5					7	7	0	ND	0	ND	0	0	0	0	0
	Synthetic Mineral Fibre	g/kg	0.1					7	7	0	ND	0	ND	0	0	0	0	0
Inorganics	Moisture Content (dried @ 103°C)	%	0.1					1	1	20	20	20	20		20		0	0
Un-assigned	weight of sample	g	0.01					7	7	50.9	50.9	81.5	81.5	68	75.8	13	0	0

Table T3
Soil Analytical Results - Waste Classification
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

							Field_ID	BH001_0.0-0.1	BH002_0.0-0.3	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5
							Location_Code	BH001	BH002	BH003	BH003	BH003	BH004	BH005	BH005
							Sample_Depth_Range	0-0.1	0-0.3	0-0.1	0.5-0.6	0.7-0.8	0-0.3	0-0.1	0.4-0.5
							Sampled_Date_Time	13/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	13/01/2021	13/01/2021
							Matrix_Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
							Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586
Chem_Group	**ChemName**	**output unit**	**LOR**	NSW EPA 2014 General Solid Waste CT1 (No Leaching)	NSW EPA 2014 General Solid Waste SCC1 (with leached) - as amended 2016	NSW EPA 2014 Restricted Solid Waste CT2 (No Leaching)	NSW EPA 2014 Restricted Solid Waste SCC2 (with leached) - as amended 2016								
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1					8.7	8.5	8.4	8.7	8.6	9.1	8.8	8.6
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1					-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10	650	**650**	2600	*2600*	<10	<10	<10	<10	<10	<10	<10	<10
	C10-C14 fraction	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	<50
	C15-C28 fraction	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	<100
	C29-C36 fraction	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	<100
	C10-C36 fraction (sum)	mg/kg	50	10000	**10000**	40000	*40000*	<50	<50	<50	<50	<50	<50	<50	<50
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10					<10	<10	<10	<10	<10	<10	<10	<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10					<10	<10	<10	<10	<10	<10	<10	<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	<50
	>C10-C16 fraction	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	<50
	>C16-C34 fraction	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	<100
	>C34-C40 fraction	mg/kg	100					<100	<100	<100	<100	<100	<100	<100	<100
	>C10-C40 fraction (sum)	mg/kg	50					<50	<50	<50	<50	<50	<50	<50	<50
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	10	**18**	40	*72*	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	mg/kg	0.5	288	**518**	1152	*2073*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Ethylbenzene	mg/kg	0.5	600	**1080**	2400	*4320*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	m&p-Xylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	o-Xylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Total Xylenes	mg/kg	0.5	1000	**1800**	4000	*7200*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Styrene	mg/kg	0.5	60	**108**	240	*432*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Isopropylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	n-butylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	n-propylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	p-isopropyltoluene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	sec-butylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	tert-butylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2,4-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,3,5-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Total BTEX	mg/kg	0.2					<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naphthalene	Naphthalene (VOC)	mg/kg	1					<1	<1	<1	<1	<1	<1	<1	<1
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5					0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5					1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
	Total Positive PAHs	mg/kg	0.05					-	-	-	-	-	-	-	-
	Naphthalene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Acenaphthylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Acenaphthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Anthracene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Fluorene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Phenanthrene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Fluoranthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benz(a)anthracene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(k)fluoranthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(b&j)fluoranthene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-	-	-	-	-	-	-	-
	Benzo(a)pyrene	mg/kg	0.5	0.8	**10**	3.2	*23*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Chrysene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Pyrene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(g,h,i)perylene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Sum of PAHs	mg/kg	0.5	200	**200**	800	*800*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Metals	Arsenic	mg/kg	5	100	**500**	400	*2000*	6	6	<5	6	6	6	5	<5
	Cadmium	mg/kg	1	20	**100**	80	*400*	<1	<1	<1	<1	<1	<1	<1	<1
	Chromium	mg/kg	2					18	17	12	11	13	16	12	11
	Copper	mg/kg	5					21	17	15	14	16	18	15	13
	Lead	mg/kg	5	100	**1500**	400	*6000*	20	15	13	6	12	10	82	6
	Mercury	mg/kg	0.1	4	**50**	16	*200*	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Nickel	mg/kg	2	40	**1050**	160	*4200*	11	12	9	8	10	12	9	9
	Zinc	mg/kg	5					54	37	35	22	36	32	190	21
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Chlorobenzene	mg/kg	0.5	2000	**3600**	8000	*14400*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	4-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2-Dichlorobenzene	mg/kg	0.5	86	**4.3**	344	*620*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,3-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,4-Dichlorobenzene	mg/kg	0.5	150	**7.5**	600	*1080*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2,3-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2,4-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Chem_Group	ChemName	output unit	LOR	NSW EPA 2014 General Solid Waste CT1 (No Leaching)	NSW EPA 2014 General Solid Waste SCC1 (with leached) - as amended 2016	NSW EPA 2014 Restricted Solid Waste CT2 (No Leaching)	NSW EPA 2014 Restricted Solid Waste SCC2 (with leached) - as amended 2016	Field_ID	BH001_0.0-0.1	BH002_0.0-0.3	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5
								Location_Code	BH001	BH002	BH003	BH003	BH003	BH004	BH005	BH005
								Sample_Depth_Range	0-0.1	0-0.3	0-0.1	0.5-0.6	0.7-0.8	0-0.3	0-0.1	0.4-0.5
								Sampled_Date_Time	13/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	13/01/2021	13/01/2021
								Matrix_Type	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
								Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1					-	-	-	-	-	-	-	-
	Dichlorodifluoromethane (Freon 12)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5
	Chloromethane	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5
	Vinyl chloride	mg/kg	5	4	**7.2**	16	*28.8*	<5	<5	<5	<5	<5	<5	<5	<5
	Bromomethane	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5
	Chloroethane	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5
	Trichlorofluoromethane (Freon 11)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5
	1,1-Dichloroethene	mg/kg	0.5	14	**0.7**	56	*100*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Iodomethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,1-Dichloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	cis-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	trans-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,1,1-Trichloroethane	mg/kg	0.5	600	**1080**	2400	*4320*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,1-Dichloropropene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Carbon Tetrachloride	mg/kg	0.5	10	**18**	40	*72*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2-Dichloroethane	mg/kg	0.5	10	**0.5**	40	*72*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Trichloroethene	mg/kg	0.5	10	**18**	40	*72*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Dibromomethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,1,2-Trichloroethane	mg/kg	0.5	24	**43.2**	96	*172.8*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,3-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Tetrachloroethene	mg/kg	0.5	14	**25.2**	56	*100.8*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,1,1,2-Tetrachloroethane	mg/kg	0.5	200	**360**	800	*1440*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	trans-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	cis-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,1,2,2-Tetrachloroethane	mg/kg	0.5	26	**46.8**	104	*187.2*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2,3-Trichloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Pentachloroethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2-Dibromo-3-chloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Hexachlorobutadiene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	1,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	cis-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	trans-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trihalomethanes	Bromodichloromethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Bromoform	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Chloroform	mg/kg	0.5	120	**126**	480	*864*	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Dibromochloromethane	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Physico-Chemical Parameters	Moisture Content	%	1					16.2	11.5	8	14.8	12.1	17.6	9.9	17.6
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2					<0.2	<0.2	<0.2	8.3	6.6	3.8	<0.2	7
	Cation Exchange Capacity	meq/100g	0.2					9	13.8	7.2	13.2	11.9	14.7	8	11.7
	Exchangeable Calcium	meq/100g	0.2					8	12	6.7	8.8	8.3	11.2	6.4	8.5
	Exchangeable Magnesium	meq/100g	0.2					0.6	0.6	<0.2	3.3	2.8	1.9	0.9	2.4
	Exchangeable Potassium	meq/100g	0.2					0.4	1.2	0.5	<0.2	<0.2	1	0.7	<0.2
	Exchangeable Sodium	meq/100g	0.2					<0.2	<0.2	<0.2	1.1	0.8	0.6	<0.2	0.8
Oxygenated Compounds	Vinyl acetate	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5
	2-Butanone (MEK)	mg/kg	5	4000	**7200**	16000	*28800*	<5	<5	<5	<5	<5	<5	<5	<5
	2-hexanone (MBK)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5
	4-Methyl-2-pentanone (MIBK)	mg/kg	5					<5	<5	<5	<5	<5	<5	<5	<5
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Asbestos	APPROVED IDENTIFIER:	-						-	-	-	-	-	-	-	-
	Asbestos fibres	-	0.1					0	0	0	-	-	0	0	-
	Asbestos Type	-						Not detected	Not detected	Not detected	-	-	Not detected	Not detected	-
	Organic Fibre	g/kg	0.1					0	0	0	-	-	0	0	-
	Asbestos (Trace)	Fibres	5					0	0	0	-	-	0	0	-
	Synthetic Mineral Fibre	g/kg	0.1					0	0	0	-	-	0	0	-
Inorganics	Moisture Content (dried @ 103°C)	%	0.1					-	-	-	-	-	-	-	-
Un-assigned	weight of sample	g	0.01					80.8	75.8	50.9	-	-	76.9	55.7	-

Table T3
Soil Analytical Results - Waste Classification
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

							Field_ID	BH006_0.0-0.1	BH006_0.2-0.3	Fragment_200114_200114	QC100_200112	QC200_200113	Tank_0.0-0.1	Tank_0.1-0.2	Tank_0.2-0.3	Tank_0.3-0.4
							Location_Code	BH006	BH006	Fragment	BH004	BH005	Tank	Tank	Tank	Tank
							Sample_Depth_Range	0-0.1	0.2-0.3		0-0.3	0.4-0.5	0-0.1	0.1-0.2	0.2-0.3	0.3-0.4
							Sampled_Date_Time	14/01/2021	14/01/2021	14/01/2021	12/01/2021	13/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021
							Matrix_Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
							Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	259778	ES2101586	ES2101586	ES2101586	ES2101586
Chem_Group	**ChemName**	**output unit**	**LOR**	NSW EPA 2014 General Solid Waste CT1 (No Leaching)	NSW EPA 2014 General Solid Waste SCC1 (with leached) - as amended 2016	NSW EPA 2014 Restricted Solid Waste CT2 (No Leaching)	NSW EPA 2014 Restricted Solid Waste SCC2 (with leached) - as amended 2016									
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1					8.6	8.8	-	-	-	8.2	8.3	8.3	8.2
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1					-	-	-	-	<1	-	-	-	-
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10	650	**650**	2600	*2600*	<10	<10	-	<10	<25	<10	<10	<10	<10
	C10-C14 fraction	mg/kg	50					<50	<50	-	<50	<50	270	440	530	90
	C15-C28 fraction	mg/kg	100					<100	<100	-	<100	<100	40,400	13,200	20,300	3860
	C29-C36 fraction	mg/kg	100					<100	<100	-	<100	<100	30,600	9130	14,800	2850
	C10-C36 fraction (sum)	mg/kg	50	10000	**10000**	40000	*40000*	<50	<50	-	<50	-	***71,300***	**22,800**	**35,600**	6800
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10					<10	<10	-	<10	<25	<10	<10	<10	<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10					<10	<10	-	<10	<25	<10	<10	<10	<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50					<50	<50	-	<50	<50	1240	1320	1560	360
	>C10-C16 fraction	mg/kg	50					<50	<50	-	<50	<50	1240	1320	1560	360
	>C16-C34 fraction	mg/kg	100					<100	<100	-	<100	<100	63,600	19,600	30,900	5900
	>C34-C40 fraction	mg/kg	100					<100	<100	-	<100	<100	12,500	3580	6230	1150
	>C10-C40 fraction (sum)	mg/kg	50					<50	<50	-	<50	<50	77,300	24,500	38,700	7410
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	10	**18**	40	*72*	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Toluene	mg/kg	0.5	288	**518**	1152	*2073*	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Ethylbenzene	mg/kg	0.5	600	**1080**	2400	*4320*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	m&p-Xylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<2	<0.5	<0.5	<0.5	<0.5
	o-Xylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Total Xylenes	mg/kg	0.5	1000	**1800**	4000	*7200*	<0.5	<0.5	-	<0.5	<3	<0.5	<0.5	<0.5	<0.5
	Styrene	mg/kg	0.5	60	**108**	240	*432*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Isopropylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	n-butylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	n-propylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	p-isopropyltoluene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	sec-butylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	tert-butylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,2,4-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,3,5-trimethylbenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Total BTEX	mg/kg	0.2					<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2
Naphthalene	Naphthalene (VOC)	mg/kg	1					<1	<1	-	<1	-	<1	<1	<1	<1
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5					0.6	0.6	-	0.6	<0.5	0.6	0.6	0.6	0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5					1.2	1.2	-	1.2	<0.5	1.2	1.2	1.2	1.2
	Total Positive PAHs	mg/kg	0.05					-	-	-	-	<0.05	-	-	-	-
	Naphthalene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Acenaphthylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Acenaphthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Anthracene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Fluorene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Phenanthrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	0.5	<0.5	<0.5	<0.5
	Fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Benz(a)anthracene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Benzo(k)fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
	Benzo(b&j)fluoranthene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					-	-	-	-	<0.2	-	-	-	-
	Benzo(a)pyrene	mg/kg	0.5	0.8	**10**	3.2	*23*	<0.5	<0.5	-	<0.5	<0.05	<0.5	<0.5	<0.5	<0.5
	Chrysene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Pyrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	1.6	0.5	0.9	<0.5
	Benzo(g,h,i)perylene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<0.1	<0.5	<0.5	<0.5	<0.5
	Sum of PAHs	mg/kg	0.5	200	**200**	800	*800*	<0.5	<0.5	-	<0.5	-	2.1	0.5	0.9	<0.5
Metals	Arsenic	mg/kg	5	100	**500**	400	*2000*	7	8	-	5	6	<5	<5	<5	<5
	Cadmium	mg/kg	1	20	**100**	80	*400*	<1	<1	-	<1	<0.4	<1	<1	<1	<1
	Chromium	mg/kg	2					10	14	-	16	13	12	12	14	10
	Copper	mg/kg	5					21	27	-	17	15	16	14	18	12
	Lead	mg/kg	5	100	**1500**	400	*6000*	30	88	-	9	7	50	13	11	8
	Mercury	mg/kg	0.1	4	**50**	16	*200*	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Nickel	mg/kg	2	40	**1050**	160	*4200*	11	14	-	12	9	9	9	11	8
	Zinc	mg/kg	5					62	254	-	30	22	345	48	53	38
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Chlorobenzene	mg/kg	0.5	2000	**3600**	8000	*14400*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	2-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	4-Chlorotoluene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,2-Dichlorobenzene	mg/kg	0.5	86	**4.3**	344	*620*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,3-Dichlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,4-Dichlorobenzene	mg/kg	0.5	150	**7.5**	600	*1080*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,2,3-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,2,4-Trichlorobenzene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5

Table T3
Soil Analytical Results - Waste Classification
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

							Field_ID	BH006_0.0-0.1	BH006_0.2-0.3	Fragment_200114_200114	QC100_200112	QC200_200113	Tank_0.0-0.1	Tank_0.1-0.2	Tank_0.2-0.3	Tank_0.3-0.4
							Location_Code	BH006	BH006	Fragment	BH004	BH005	Tank	Tank	Tank	Tank
							Sample_Depth_Range	0-0.1	0.2-0.3		0-0.3	0.4-0.5	0-0.1	0.1-0.2	0.2-0.3	0.3-0.4
							Sampled_Date_Time	14/01/2021	14/01/2021	14/01/2021	12/01/2021	13/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021
							Matrix_Type	SOIL	SOIL	SOLID	SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
							Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	259778	ES2101586	ES2101586	ES2101586	ES2101586
Chem_Group	**ChemName**	**output unit**	**LOR**	NSW EPA 2014 General Solid Waste CT1 (No Leaching)	NSW EPA 2014 General Solid Waste SCC1 (with leached) - as amended 2016	NSW EPA 2014 Restricted Solid Waste CT2 (No Leaching)	NSW EPA 2014 Restricted Solid Waste SCC2 (with leached) - as amended 2016										
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1					-	-	-	-	<1	-	-	-	-
	Dichlorodifluoromethane (Freon 12)	mg/kg	5					<5	<5	-	<5	<1	<5	<5	<5	<5
	Chloromethane	mg/kg	5					<5	<5	-	<5	<1	<5	<5	<5	<5
	Vinyl chloride	mg/kg	5	4	**7.2**	16	*28.8*	<5	<5	-	<5	<1	<5	<5	<5	<5
	Bromomethane	mg/kg	5					<5	<5	-	<5	<1	<5	<5	<5	<5
	Chloroethane	mg/kg	5					<5	<5	-	<5	<1	<5	<5	<5	<5
	Trichlorofluoromethane (Freon 11)	mg/kg	5					<5	<5	-	<5	<1	<5	<5	<5	<5
	1,1-Dichloroethene	mg/kg	0.5	14	**0.7**	56	*100*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Iodomethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
	1,1-Dichloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	cis-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	trans-1,2-Dichloroethene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,1,1-Trichloroethane	mg/kg	0.5	600	**1080**	2400	*4320*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,1-Dichloropropene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Carbon Tetrachloride	mg/kg	0.5	10	**18**	40	*72*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,2-Dichloroethane	mg/kg	0.5	10	**0.5**	40	*72*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Trichloroethene	mg/kg	0.5	10	**18**	40	*72*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Dibromomethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,1,2-Trichloroethane	mg/kg	0.5	24	**43.2**	96	*172.8*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,3-Dichloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Tetrachloroethene	mg/kg	0.5	14	**25.2**	56	*100.8*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,1,1,2-Tetrachloroethane	mg/kg	0.5	200	**360**	800	*1440*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	trans-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
	cis-1,4-Dichloro-2-butene	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
	1,1,2,2-Tetrachloroethane	mg/kg	0.5	26	**46.8**	104	*187.2*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,2,3-Trichloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Pentachloroethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
	1,2-Dibromo-3-chloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Hexachlorobutadiene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	1,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	2,2-Dichloropropane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	cis-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	trans-1,3-Dichloropropene	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Trihalomethanes	Bromodichloromethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Bromoform	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Chloroform	mg/kg	0.5	120	**126**	480	*864*	<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
	Dibromochloromethane	mg/kg	0.5					<0.5	<0.5	-	<0.5	<1	<0.5	<0.5	<0.5	<0.5
Physico-Chemical Parameters	Moisture Content	%	1					10	12.1	-	17.2	-	2.3	22.8	10.8	15.6
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2					5.8	7.8	-	-	-	14.9	11.7	13.4	15.2
	Cation Exchange Capacity	meq/100g	0.2					8.2	7	-	-	-	4.3	11.2	12.7	15.6
	Exchangeable Calcium	meq/100g	0.2					5.9	5.3	-	-	-	3.1	7	7.6	10.5
	Exchangeable Magnesium	meq/100g	0.2					1.2	1.2	-	-	-	0.5	2.4	2.8	2.6
	Exchangeable Potassium	meq/100g	0.2					0.5	<0.2	-	-	-	<0.2	0.6	0.6	<0.2
	Exchangeable Sodium	meq/100g	0.2					0.5	0.5	-	-	-	0.6	1.3	1.7	2.4
Oxygenated Compounds	Vinyl acetate	mg/kg	5					<5	<5	-	<5	-	<5	<5	<5	<5
	2-Butanone (MEK)	mg/kg	5	4000	**7200**	16000	*28800*	<5	<5	-	<5	-	<5	<5	<5	<5
	2-hexanone (MBK)	mg/kg	5					<5	<5	-	<5	-	<5	<5	<5	<5
	4-Methyl-2-pentanone (MIBK)	mg/kg	5					<5	<5	-	<5	-	<5	<5	<5	<5
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5					<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5
Asbestos	APPROVED IDENTIFIER:	-						-	-	-	-	-	-	-	-	-
	Asbestos fibres	-	0.1					0	-	0	-	-	-	-	-	-
	Asbestos Type	-						Not detected	-	Not detected	-	-	-	-	-	-
	Organic Fibre	g/kg	0.1					0	-	1	-	-	-	-	-	-
	Asbestos (Trace)	Fibres	5					0	-	0	-	-	-	-	-	-
	Synthetic Mineral Fibre	g/kg	0.1					0	-	0	-	-	-	-	-	-
Inorganics	Moisture Content (dried @ 103°C)	%	0.1					-	-	-	-	20	-	-	-	-
Un-assigned	weight of sample	g	0.01					81.5	-	57.6	-	-	-	-	-	-

Table T3
Soil Analytical Results - Waste Classification
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

							Field_ID															
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							Sample_Depth_Range															
							Sampled_Date_Time															
							Matrix_Type															
							Lab_Report_Number															
											Statistical Summary											
Chem_Group	**ChemName**	**output unit**	**LOR**	NSW EPA 2014 General Solid Waste CT1 (No Leaching)	NSW EPA 2014 General Solid Waste SCC1 (with leached) - as amended 2016	NSW EPA 2014 Restricted Solid Waste CT2 (No Leaching)	NSW EPA 2014 Restricted Solid Waste SCC2 (with leached) - as amended 2016	Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Average Concentration	Median Concentration	Standard Deviation	Number of Guideline Exceedances	Number of Guideline Exceedances (Detects Only)
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1					14	14	8.2	8.2	9.1	9.1	8.6	8.6	0.26	0	0
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1					1	0	<1	ND	<1	ND		0.5		0	0
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10	650	**650**	2600	*2600*	16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	C10-C14 fraction	mg/kg	50					16	4	<50	90	530	530	102	25	163	0	0
	C15-C28 fraction	mg/kg	100					16	4	<100	3860	40400	40400	4898	50	11105	0	0
	C29-C36 fraction	mg/kg	100					16	4	<100	2850	30600	30600	3624	50	8314	0	0
	C10-C36 fraction (sum)	mg/kg	50	10000	**10000**	40000	*40000*	15	4	<50	6800	71300	71300	9118	25	20125	3	3
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10					16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10					16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50					16	4	<50	360	1560	1560	299	25	543	0	0
	>C10-C16 fraction	mg/kg	50					16	4	<50	360	1560	1560	299	25	543	0	0
	>C16-C34 fraction	mg/kg	100					16	4	<100	5900	63600	63600	7538	50	17339	0	0
	>C34-C40 fraction	mg/kg	100					16	4	<100	1150	12500	12500	1504	50	3397	0	0
	>C10-C40 fraction (sum)	mg/kg	50					16	4	<50	7410	77300	77300	9263	25	21221	0	0
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	10	**18**	40	*72*	16	0	<0.2	ND	<0.2	ND	0.1	0.1	0	0	0
	Toluene	mg/kg	0.5	288	**518**	1152	*2073*	16	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Ethylbenzene	mg/kg	0.5	600	**1080**	2400	*4320*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	m&p-Xylene	mg/kg	0.5					16	0	<0.5	ND	<2	ND	0.3	0.25	0.19	0	0
	o-Xylene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Total Xylenes	mg/kg	0.5	1000	**1800**	4000	*7200*	16	0	<0.5	ND	<3	ND	0.33	0.25	0.31	0	0
	Styrene	mg/kg	0.5	60	**108**	240	*432*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Isopropylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	n-butylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	n-propylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	p-isopropyltoluene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	sec-butylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	tert-butylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,4-trimethylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3,5-trimethylbenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Total BTEX	mg/kg	0.2					15	0	<0.2	ND	<0.2	ND	0.1	0.1	0	0	0
Naphthalene	Naphthalene (VOC)	mg/kg	1					15	0	<1	ND	<1	ND	0.5	0.5	0	0	0
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5					16	15	<0.5	0.6	0.6	0.6	0.58	0.6	0.088	0	0
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5					16	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5					16	15	<0.5	1.2	1.2	1.2	1.1	1.2	0.24	0	0
	Total Positive PAHs	mg/kg	0.05					1	0	<0.05	ND	<0.05	ND		0.025		0	0
	Naphthalene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Acenaphthylene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Acenaphthene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Anthracene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Fluorene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Phenanthrene	mg/kg	0.5					16	1	<0.1	0.5	0.5	0.5	0.25	0.25	0.083	0	0
	Fluoranthene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Benz(a)anthracene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Benzo(k)fluoranthene	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(b&j)fluoranthene	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2					1	0	<0.2	ND	<0.2	ND		0.1		0	0
	Benzo(a)pyrene	mg/kg	0.5	0.8	**10**	3.2	*23*	16	0	<0.05	ND	<0.5	ND	0.24	0.25	0.056	0	0
	Chrysene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Pyrene	mg/kg	0.5					16	3	<0.1	0.5	1.6	1.6	0.38	0.25	0.37	0	0
	Benzo(g,h,i)perylene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Dibenz(a,h)anthracene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5					16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Sum of PAHs	mg/kg	0.5	200	**200**	800	*800*	15	3	<0.5	0.5	2.1	2.1	0.43	0.25	0.49	0	0
Metals	Arsenic	mg/kg	5	100	**500**	400	*2000*	16	10	<5	5	8	8	4.8	5.5	1.9	0	0
	Cadmium	mg/kg	1	20	**100**	80	*400*	16	0	<0.4	ND	<1	ND	0.48	0.5	0.075	0	0
	Chromium	mg/kg	2					16	16	10	10	18	18	13	12.5	2.5	0	0
	Copper	mg/kg	5					16	16	12	12	27	27	17	16	3.7	0	0
	Lead	mg/kg	5	100	**1500**	400	*6000*	16	16	6	6	88	88	24	12.5	26	0	0
	Mercury	mg/kg	0.1	4	**50**	16	*200*	16	0	<0.1	ND	<0.1	ND	0.05	0.05	0	0	0
	Nickel	mg/kg	2	40	**1050**	160	*4200*	16	16	8	8	14	14	10	9.5	1.7	0	0
	Zinc	mg/kg	5					16	16	21	21	345	345	80	37.5	96	0	0
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Chlorobenzene	mg/kg	0.5	2000	**3600**	8000	*14400*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	2-Chlorotoluene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	4-Chlorotoluene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichlorobenzene	mg/kg	0.5	86	**4.3**	344	*620*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3-Dichlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,4-Dichlorobenzene	mg/kg	0.5	150	**7.5**	600	*1080*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,3-Trichlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,4-Trichlorobenzene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0

Table T3
Soil Analytical Results - Waste Classification
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AECOM

								Field_ID													
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									Statistical Summary												
Chem_Group	**ChemName**	**output unit**	**LOR**	NSW EPA 2014 General Solid Waste CT1 (No Leaching)	NSW EPA 2014 General Solid Waste SCC1 (with leached) - as amended 2016	NSW EPA 2014 Restricted Solid Waste CT2 (No Leaching)	NSW EPA 2014 Restricted Solid Waste SCC2 (with leached) - as amended 2016	Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Average Concentration	Median Concentration	Standard Deviation	Number of Guideline Exceedances	Number of Guideline Exceedances (Detects Only)
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1					1	0	<1	ND	<1	ND		0.5		0	0
	Dichlorodifluoromethane (Freon 12)	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Chloromethane	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Vinyl chloride	mg/kg	5	4	**7.2**	16	*28.8*	16	0	<1	ND	<5	ND	2.4	2.5	0.5	15	0
	Bromomethane	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Chloroethane	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Trichlorofluoromethane (Freon 11)	mg/kg	5					16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	1,1-Dichloroethene	mg/kg	0.5	14	**0.7**	56	*100*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	1	0
	Iodomethane	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,1-Dichloroethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	cis-1,2-Dichloroethene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,2-Dichloroethene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,1-Trichloroethane	mg/kg	0.5	600	**1080**	2400	*4320*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1-Dichloropropene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Carbon Tetrachloride	mg/kg	0.5	10	**18**	40	*72*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichloroethane	mg/kg	0.5	10	**0.5**	40	*72*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	1	0
	Trichloroethene	mg/kg	0.5	10	**18**	40	*72*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Dibromomethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,2-Trichloroethane	mg/kg	0.5	24	**43.2**	96	*172.8*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3-Dichloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Tetrachloroethene	mg/kg	0.5	14	**25.2**	56	*100.8*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,1,2-Tetrachloroethane	mg/kg	0.5	200	**360**	800	*1440*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,4-Dichloro-2-butene	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	cis-1,4-Dichloro-2-butene	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,1,2,2-Tetrachloroethane	mg/kg	0.5	26	**46.8**	104	*187.2*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,3-Trichloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Pentachloroethane	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,2-Dibromo-3-chloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Hexachlorobutadiene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	2,2-Dichloropropane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	cis-1,3-Dichloropropene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,3-Dichloropropene	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Trihalomethanes	Bromodichloromethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Bromoform	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Chloroform	mg/kg	0.5	120	**126**	480	*864*	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Dibromochloromethane	mg/kg	0.5					16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Physico-Chemical Parameters	Moisture Content	%	1					15	15	2.3	2.3	22.8	22.8	13	12.1	4.9	0	0
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2					14	10	<0.2	3.8	15.2	15.2	6.8	6.8	5.5	0	0
	Cation Exchange Capacity	meq/100g	0.2					14	14	4.3	4.3	15.6	15.6	11	11.45	3.3	0	0
	Exchangeable Calcium	meq/100g	0.2					14	14	3.1	3.1	12	12	7.8	7.8	2.4	0	0
	Exchangeable Magnesium	meq/100g	0.2					14	13	<0.2	0.5	3.3	3.3	1.7	1.55	1.1	0	0
	Exchangeable Potassium	meq/100g	0.2					14	8	<0.2	0.4	1.2	1.2	0.44	0.45	0.36	0	0
	Exchangeable Sodium	meq/100g	0.2					14	10	<0.2	0.5	2.4	2.4	0.76	0.6	0.67	0	0
Oxygenated Compounds	Vinyl acetate	mg/kg	5					15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	2-Butanone (MEK)	mg/kg	5	4000	**7200**	16000	*28800*	15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	2-hexanone (MBK)	mg/kg	5					15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	4-Methyl-2-pentanone (MIBK)	mg/kg	5					15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5					15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
Asbestos	APPROVED IDENTIFIER:	-						7	7	99999	ND	0	ND				0	0
	Asbestos fibres	-	0.1					7	7	0	ND	0	ND	0	0	0	0	0
	Asbestos Type	-						0	0	99999	ND	0	ND				0	0
	Organic Fibre	g/kg	0.1					7	7	0	1	1	1	0.14	0	0.38	0	0
	Asbestos (Trace)	Fibres	5					7	7	0	ND	0	ND	0	0	0	0	0
	Synthetic Mineral Fibre	g/kg	0.1					7	7	0	ND	0	ND	0	0	0	0	0
Inorganics	Moisture Content (dried @ 103°C)	%	0.1					1	1	20	20	20	20		20		0	0
Un-assigned	weight of sample	g	0.01					7	7	50.9	50.9	81.5	81.5	68	75.8	13	0	0

Table T3
Soil Analytical Results
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Broken Hill Energy Storage System
AGL Energy Limited

AECOM

Chem_Group	ChemName	output unit	LOR	NSW EPA 2014 ENM (Absolute Maximum Concentration)	Field_ID	BH001_0.0-0.1	BH002_0.0-0.3	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5	BH006_0.0-0.1	BH006_0.2-0.3	Fragment_200114_200114	QC100_200112	QC200_200113
					Location_Code	BH001	BH002	BH003	BH003	BH003	BH004	BH005	BH005	BH006	BH006	Fragment	BH004	BH005
					Sample_Depth_Range	0-0.1	0-0.3	0-0.1	0.5-0.6	0.7-0.8	0-0.3	0-0.1	0.4-0.5	0-0.1	0.2-0.3		0-0.3	0.4-0.5
					Sampled_Date_Time	13/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	13/01/2021	13/01/2021	14/01/2021	14/01/2021	14/01/2021	12/01/2021	13/01/2021
					Matrix_Type	soil	soil	soil	soil	soil	soil	soil	soil	soil	soil	Solid	soil	soil
					Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	259778
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1	4.5-10	8.7	8.5	8.4	8.7	8.6	9.1	8.8	8.6	8.6	8.8	-	-	-
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1		-	-	-	-	-	-	-	-	-	-	-	-	<1
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<25
	C10-C14 fraction	mg/kg	50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50
	C15-C28 fraction	mg/kg	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	<100	<100
	C29-C36 fraction	mg/kg	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	<100	<100
	C10-C36 fraction (sum)	mg/kg	50	500	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	-
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<25
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10		<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	-	<10	<25
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50
	>C10-C16 fraction	mg/kg	50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50
	>C16-C34 fraction	mg/kg	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	<100	<100
	>C34-C40 fraction	mg/kg	100		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	<100	<100
	>C10-C40 fraction (sum)	mg/kg	50		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	<50	<50
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2
	Toluene	mg/kg	0.5	65	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5
	Ethylbenzene	mg/kg	0.5	25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	m&p-Xylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<2
	o-Xylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Total Xylenes	mg/kg	0.5	15	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<3
	Styrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Isopropylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	n-butylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	n-propylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	p-isopropyltoluene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	sec-butylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	tert-butylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,2,4-trimethylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,3,5-trimethylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Total BTEX	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	-
Naphthalene	Naphthalene (VOC)	mg/kg	1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	-
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5		0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	-	0.6	<0.5
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5		1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	-	1.2	<0.5
	Total Positive PAHs	mg/kg	0.05		-	-	-	-	-	-	-	-	-	-	-	-	<0.05
	Naphthalene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Acenaphthylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Acenaphthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Fluorene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Phenanthrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Fluoranthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Benz(a)anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Benzo(k)fluoranthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-
	Benzo(b&j)fluoranthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2		-	-	-	-	-	-	-	-	-	-	-	-	<0.2
	Benzo(a)pyrene	mg/kg	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.05
	Chrysene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Pyrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Benzo(g,h,i)perylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Dibenz(a,h)anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.1
	Sum of PAHs	mg/kg	0.5	40	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-
Metals	Arsenic	mg/kg	5	40	6	6	<5	6	6	6	5	<5	7	8	-	5	6
	Cadmium	mg/kg	1	1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<0.4
	Chromium	mg/kg	2	150	18	17	12	11	13	16	12	11	10	14	-	16	13
	Copper	mg/kg	5	200	21	17	15	14	16	18	15	13	21	27	-	17	15
	Lead	mg/kg	5	100	20	15	13	6	12	10	82	6	30	88	-	9	7
	Mercury	mg/kg	0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1
	Nickel	mg/kg	2	60	11	12	9	8	10	12	9	9	11	14	-	12	9
	Zinc	mg/kg	5	300	54	37	35	22	36	32	190	21	62	254	-	30	22
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Chlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	2-Chlorotoluene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	4-Chlorotoluene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,2-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,3-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,4-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,2,3-Trichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,2,4-Trichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1

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AECOM

Chem_Group	ChemName	output unit	LOR	NSW EPA 2014 ENM (Absolute Maximum Concentration)	Field_ID	BH001_0.0-0.1	BH002_0.0-0.3	BH003_0.0-0.1	BH003_0.5-0.6	BH003_0.7-0.8	BH004_0.0-0.3	BH005_0.0-0.1	BH005_0.4-0.5	BH006_0.0-0.1	BH006_0.2-0.3	Fragment_200114_200114	QC100_200112	QC200_200113
					Location_Code	BH001	BH002	BH003	BH003	BH003	BH004	BH005	BH005	BH006	BH006	Fragment	BH004	BH005
					Sample_Depth_Range	0-0.1	0-0.3	0-0.1	0.5-0.6	0.7-0.8	0-0.3	0-0.1	0.4-0.5	0-0.1	0.2-0.3		0-0.3	0.4-0.5
					Sampled_Date_Time	13/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	12/01/2021	13/01/2021	13/01/2021	14/01/2021	14/01/2021	14/01/2021	12/01/2021	13/01/2021
					Matrix_Type	soil	soil	soil	soil	soil	soil	soil	soil	soil	soil	Solid	soil	soil
					Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586	259778
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1		-	-	-	-	-	-	-	-	-	-	-	-	<1
	Dichlorodifluoromethane (Freon 12)	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<1
	Chloromethane	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<1
	Vinyl chloride	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<1
	Bromomethane	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<1
	Chloroethane	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<1
	Trichlorofluoromethane (Freon 11)	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	<1
	1,1-Dichloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Iodomethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-
	1,1-Dichloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	cis-1,2-Dichloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	trans-1,2-Dichloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,1,1-Trichloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,1-Dichloropropene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Carbon Tetrachloride	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,2-Dichloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Trichloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Dibromomethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,1,2-Trichloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,3-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Tetrachloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,1,1,2-Tetrachloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	trans-1,4-Dichloro-2-butene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-
	cis-1,4-Dichloro-2-butene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-
	1,1,2,2-Tetrachloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,2,3-Trichloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Pentachloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-
	1,2-Dibromo-3-chloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Hexachlorobutadiene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	1,2-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	2,2-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	cis-1,3-Dichloropropene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	trans-1,3-Dichloropropene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
Trihalomethanes	Bromodichloromethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Bromoform	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Chloroform	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
	Dibromochloromethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<1
Physico-Chemical Parameters	Moisture Content	%	1		16.2	11.5	8	14.8	12.1	17.6	9.9	17.6	10	12.1	-	17.2	20
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2		<0.2	<0.2	<0.2	8.3	6.6	3.8	<0.2	7	5.8	7.8	-	-	-
	Cation Exchange Capacity	meq/100g	0.2		9	13.8	7.2	13.2	11.9	14.7	8	11.7	8.2	7	-	-	-
	Exchangeable Calcium	meq/100g	0.2		8	12	6.7	8.8	8.3	11.2	6.4	8.5	5.9	5.3	-	-	-
	Exchangeable Magnesium	meq/100g	0.2		0.6	0.6	<0.2	3.3	2.8	1.9	0.9	2.4	1.2	1.2	-	-	-
	Exchangeable Potassium	meq/100g	0.2		0.4	1.2	0.5	<0.2	<0.2	1	0.7	<0.2	0.5	<0.2	-	-	-
	Exchangeable Sodium	meq/100g	0.2		<0.2	<0.2	<0.2	1.1	0.8	0.6	<0.2	0.8	0.5	0.5	-	-	-
Oxygenated Compounds	Vinyl acetate	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-
	2-Butanone (MEK)	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-
	2-hexanone (MBK)	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-
	4-Methyl-2-pentanone (MIBK)	mg/kg	5		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	<5	-
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-
Asbestos	APPROVED IDENTIFIER:	-			*	-	-	-	-	-	-	-	-	-	-	-	-
	Asbestos fibres	-	0.1		0	0	0	-	-	0	0	-	0	-	0	-	-
	Asbestos Type	-			Not Detected	Not Detected	Not Detected	-	-	Not Detected	Not Detected	-	Not Detected	-	Not Detected	-	-
	Organic Fibre	g/kg	0.1		0	0	0	-	-	0	0	-	0	-	1	-	-
	Asbestos (Trace)	Fibres	5		0	0	0	-	-	0	0	-	0	-	0	-	-
	Synthetic Mineral Fibre	g/kg	0.1		0	0	0	-	-	0	0	-	0	-	0	-	-
Un-assigned	weight of sample	g	0.01		80.8	75.8	50.9	-	-	76.9	55.7	-	81.5	-	57.6	-	-

Table T3
Soil Analytical Results
NSW EPA (2014) ENM Order
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

					Field_ID	BH001_0.0-0.1	Tank_0.0-0.1	Tank_0.1-0.2	Tank_0.2-0.3	Tank_0.3-0.4	Statistical Summary										
					Location_Code	BH001	Tank	Tank	Tank	Tank											
					Sample_Depth_Range	0-0.1	0-0.1	0.1-0.2	0.2-0.3	0.3-0.4											
					Sampled_Date_Time	13/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021											
					Matrix_Type	soil	soil	soil	soil	soil											
					Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586											
Chem_Group	**ChemName**	**output unit**	**LOR**	**NSW EPA 2014 ENM (Absolute Maximum Concentration)**						Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Average Concentration	Median Concentration	Standard Deviation	Number of Guideline Exceedances	Number of Guideline Exceedances (Detects Only)
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1	4.5-10	8.7	8.2	8.3	8.3	8.2	14	14	8.2	8.2	9.1	9.1	8.6	8.6	0.26	0	0
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1		-	-	-	-	-	1	0	<1	ND	<1	ND		0.5		0	0
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10		<10	<10	<10	<10	<10	16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	C10-C14 fraction	mg/kg	50		<50	270	440	530	90	16	4	<50	90	530	530	102	25	163	0	0
	C15-C28 fraction	mg/kg	100		<100	40,400	13,200	20,300	3860	16	4	<100	3860	40400	40400	4898	50	11105	0	0
	C29-C36 fraction	mg/kg	100		<100	30,600	9130	14,800	2850	16	4	<100	2850	30600	30600	3624	50	8314	0	0
	C10-C36 fraction (sum)	mg/kg	50	500	<50	71,300	22,800	35,600	6800	15	4	<50	6800	71300	71300	9118	25	20125	4	4
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10		<10	<10	<10	<10	<10	16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10		<10	<10	<10	<10	<10	16	0	<10	ND	<25	ND	5.5	5	1.9	0	0
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50		<50	1240	1320	1560	360	16	4	<50	360	1560	1560	299	25	543	0	0
	>C10-C16 fraction	mg/kg	50		<50	1240	1320	1560	360	16	4	<50	360	1560	1560	299	25	543	0	0
	>C16-C34 fraction	mg/kg	100		<100	63,600	19,600	30,900	5900	16	4	<100	5900	63600	63600	7538	50	17339	0	0
	>C34-C40 fraction	mg/kg	100		<100	12,500	3580	6230	1150	16	4	<100	1150	12500	12500	1504	50	3397	0	0
	>C10-C40 fraction (sum)	mg/kg	50		<50	77,300	24,500	38,700	7410	16	4	<50	7410	77300	77300	9263	25	21221	0	0
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	0.5	<0.2	<0.2	<0.2	<0.2	<0.2	16	0	<0.2	ND	<0.2	ND	0.1	0.1	0	0	0
	Toluene	mg/kg	0.5	65	<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Ethylbenzene	mg/kg	0.5	25	<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	m&p-Xylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<2	ND	0.3	0.25	0.19	0	0
	o-Xylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Total Xylenes	mg/kg	0.5	15	<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<3	ND	0.33	0.25	0.31	0	0
	Styrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Isopropylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	n-butylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	n-propylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	p-isopropyltoluene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	sec-butylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	tert-butylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,4-trimethylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3,5-trimethylbenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Total BTEX	mg/kg	0.2		<0.2	<0.2	<0.2	<0.2	<0.2	15	0	<0.2	ND	<0.2	ND	0.1	0.1	0	0	0
Naphthalene	Naphthalene (VOC)	mg/kg	1		<1	<1	<1	<1	<1	15	0	<1	ND	<1	ND	0.5	0.5	0	0	0
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5		0.6	0.6	0.6	0.6	0.6	16	15	<0.5	0.6	0.6	0.6	0.58	0.6	0.088	0	0
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5		1.2	1.2	1.2	1.2	1.2	16	15	<0.5	1.2	1.2	1.2	1.1	1.2	0.24	0	0
	Total Positive PAHs	mg/kg	0.05		-	-	-	-	-	1	0	<0.05	ND	<0.05	ND		0.025		0	0
	Naphthalene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Acenaphthylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Acenaphthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Fluorene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Phenanthrene	mg/kg	0.5		<0.5	0.5	<0.5	<0.5	<0.5	16	1	<0.1	0.5	0.5	0.5	0.25	0.25	0.083	0	0
	Fluoranthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Benz(a)anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Benzo(k)fluoranthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(b&j)fluoranthene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2		-	-	-	-	-	1	0	<0.2	ND	<0.2	ND		0.1		0	0
	Benzo(a)pyrene	mg/kg	0.5	1	<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.05	ND	<0.5	ND	0.24	0.25	0.056	0	0
	Chrysene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Pyrene	mg/kg	0.5		<0.5	1.6	0.5	0.9	<0.5	16	3	<0.1	0.5	1.6	1.6	0.38	0.25	0.37	0	0
	Benzo(g,h,i)perylene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Dibenz(a,h)anthracene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.1	ND	<0.5	ND	0.24	0.25	0.05	0	0
	Sum of PAHs	mg/kg	0.5	40	<0.5	2.1	0.5	0.9	<0.5	15	3	<0.5	0.5	2.1	2.1	0.43	0.25	0.49	0	0
Metals	Arsenic	mg/kg	5	40	6	<5	<5	<5	<5	16	10	<5	5	8	8	4.8	5.5	1.9	0	0
	Cadmium	mg/kg	1	1	<1	<1	<1	<1	<1	16	0	<0.4	ND	<1	ND	0.48	0.5	0.075	0	0
	Chromium	mg/kg	2	150	18	12	12	14	10	16	16	10	10	18	18	13	12.5	2.5	0	0
	Copper	mg/kg	5	200	21	16	14	18	12	16	16	12	12	27	27	17	16	3.7	0	0
	Lead	mg/kg	5	100	20	50	13	11	8	16	16	6	6	88	88	24	12.5	26	0	0
	Mercury	mg/kg	0.1	1	<0.1	<0.1	<0.1	<0.1	<0.1	16	0	<0.1	ND	<0.1	ND	0.05	0.05	0	0	0
	Nickel	mg/kg	2	60	11	9	9	11	8	16	16	8	8	14	14	10	9.5	1.7	0	0
	Zinc	mg/kg	5	300	54	345	48	53	38	16	16	21	21	345	345	80	37.5	96	1	1
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Chlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	2-Chlorotoluene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	4-Chlorotoluene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,4-Dichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,3-Trichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,4-Trichlorobenzene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0

Table T3
Soil Analytical Results
NSW EPA (2014) ENM Order
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

Field_ID	BH001_0.0-0.1	Tank_0.0-0.1	Tank_0.1-0.2	Tank_0.2-0.3	Tank_0.3-0.4
Location_Code	BH001	Tank	Tank	Tank	Tank
Sample_Depth_Range	0-0.1	0-0.1	0.1-0.2	0.2-0.3	0.3-0.4
Sampled_Date_Time	13/01/2021	14/01/2021	14/01/2021	14/01/2021	14/01/2021
Matrix_Type	soil	soil	soil	soil	soil
Lab_Report_Number	ES2101586	ES2101586	ES2101586	ES2101586	ES2101586

Chem_Group	ChemName	output unit	LOR	NSW EPA 2014 ENM (Absolute Maximum Concentration)						Statistical Summary										
										Number of Results	Number of Detects	Minimum Concentration	Minimum Detect	Maximum Concentration	Maximum Detect	Average Concentration	Median Concentration	Standard Deviation	Number of Guideline Exceedances	Number of Guideline Exceedances (Detects Only)
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1		-	-	-	-	-	1	0	<1	ND	<1	ND		0.5		0	0
	Dichlorodifluoromethane (Freon 12)	mg/kg	5		<5	<5	<5	<5	<5	16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Chloromethane	mg/kg	5		<5	<5	<5	<5	<5	16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Vinyl chloride	mg/kg	5		<5	<5	<5	<5	<5	16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Bromomethane	mg/kg	5		<5	<5	<5	<5	<5	16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Chloroethane	mg/kg	5		<5	<5	<5	<5	<5	16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	Trichlorofluoromethane (Freon 11)	mg/kg	5		<5	<5	<5	<5	<5	16	0	<1	ND	<5	ND	2.4	2.5	0.5	0	0
	1,1-Dichloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Iodomethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,1-Dichloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	cis-1,2-Dichloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,2-Dichloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,1-Trichloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1-Dichloropropene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Carbon Tetrachloride	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Trichloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Dibromomethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,2-Trichloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,3-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Tetrachloroethene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,1,1,2-Tetrachloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,4-Dichloro-2-butene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	cis-1,4-Dichloro-2-butene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,1,2,2-Tetrachloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2,3-Trichloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Pentachloroethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
	1,2-Dibromo-3-chloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Hexachlorobutadiene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	1,2-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	2,2-Dichloropropane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	cis-1,3-Dichloropropene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	trans-1,3-Dichloropropene	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Trihalomethanes	Bromodichloromethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Bromoform	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Chloroform	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
	Dibromochloromethane	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	16	0	<0.5	ND	<1	ND	0.27	0.25	0.063	0	0
Physico-Chemical Parameters	Moisture Content	%	1		16.2	2.3	22.8	10.8	15.6	16	16	2.3	2.3	22.8	22.8	14	13.45	5.1	0	0
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2		<0.2	14.9	11.7	13.4	15.2	14	10	<0.2	3.8	15.2	15.2	6.8	6.8	5.5	0	0
	Cation Exchange Capacity	meq/100g	0.2		9	4.3	11.2	12.7	15.6	14	14	4.3	4.3	15.6	15.6	11	11.45	3.3	0	0
	Exchangeable Calcium	meq/100g	0.2		8	3.1	7	7.6	10.5	14	14	3.1	3.1	12	12	7.8	7.8	2.4	0	0
	Exchangeable Magnesium	meq/100g	0.2		0.6	0.5	2.4	2.8	2.6	14	13	<0.2	0.5	3.3	3.3	1.7	1.55	1.1	0	0
	Exchangeable Potassium	meq/100g	0.2		0.4	<0.2	0.6	0.6	<0.2	14	8	<0.2	0.4	1.2	1.2	0.44	0.45	0.36	0	0
	Exchangeable Sodium	meq/100g	0.2		<0.2	0.6	1.3	1.7	2.4	14	10	<0.2	0.5	2.4	2.4	0.76	0.6	0.67	0	0
Oxygenated Compounds	Vinyl acetate	mg/kg	5		<5	<5	<5	<5	<5	15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	2-Butanone (MEK)	mg/kg	5		<5	<5	<5	<5	<5	15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	2-hexanone (MBK)	mg/kg	5		<5	<5	<5	<5	<5	15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
	4-Methyl-2-pentanone (MIBK)	mg/kg	5		<5	<5	<5	<5	<5	15	0	<5	ND	<5	ND	2.5	2.5	0	0	0
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5		<0.5	<0.5	<0.5	<0.5	<0.5	15	0	<0.5	ND	<0.5	ND	0.25	0.25	0	0	0
Asbestos	APPROVED IDENTIFIER:	-			*	-	-	-	-	6	6	99999	ND	0	ND				0	0
	Asbestos fibres	-	0.1		0	-	-	-	-	7	7	0	ND	0	ND	0	0	0	0	0
	Asbestos Type	-			Not Detected	-	-	-	-	0	0	99999	ND	0	ND				0	0
	Organic Fibre	g/kg	0.1		0	-	-	-	-	7	7	0	1	1	1	0.14	0	0.38	0	0
	Asbestos (Trace)	Fibres	5		0	-	-	-	-	7	7	0	ND	0	ND	0	0	0	0	0
	Synthetic Mineral Fibre	g/kg	0.1		0	-	-	-	-	7	7	0	ND	0	ND	0	0	0	0	0
Un-assigned	weight of sample	g	0.01		80.8	-	-	-	-	7	7	50.9	50.9	81.5	81.5	68	75.8	13	0	0

Appendix I

Data Validation

1.0 DATA VALIDATION

Project number:	60619153	**Validation by:**	K. Holt	**Date:**	01/02/2021
Client:	AGL Energy Limited				
Site:	74 and 80 Pinnacles Place, Broken Hill, NSW 2880				
Matrix type:	Soil	**Data verified by:**	O. Ferguson	**Date:**	09/02/2021
Samples:	14 primary, 3 rinsates, 1 inter-laboratory duplicate, 1 intra-laboratory duplicate, 1 trip blank and 1 trip spike				
Laboratory:	ALS (Primary Lab) and Envirolab (Secondary Lab)				
Lab reference:	ES2101586 and 259778	**Project Manager:**	R. O'Hara		

Key Issues:	No issues were identified. AECOM considers that the field procedures and laboratory QA/QC processes employed were appropriate for the purposes of the investigation.

Field Quality Assurance and Quality Control

Sampling personnel	Sampling was conducted by Pankti Dalal between 12 and 14 January 2021. The AECOM sampling team was suitably qualified and experienced.
Sampling Methodology	Samples were collected from a decontaminated hand auger or from the solid auger and placed directly into laboratory supplied sample containers, caps immediately applied and stored on ice for preservation. A new pair of nitrile gloves were used for each sample collection.
Chain of Custody (COC)	All samples were recorded and analysed as requested on the COC and subsequent emails.
Rinsate Blank	Rinsate blank samples were collected at a frequency of one per day (3 samples in total) from decontaminated drilling equipment. Analysis results were below the limit of reporting (LOR) with the exception of QC301_210113 which reported a concentration of 0.004 mg/L copper and 0.018 mg/L zinc. Refer to analytical results in **Table I2** in this **Appendix I**. It is considered that these detections are minor (1 rinsate over 3 days) and are unlikely to impact on the quality of the data from the soil samples collected from the drilling equipment on the following day.
Trip Blank	A trip blank was collected at a frequency of one per esky (1 in total – QC400). Analysis results were below the LOR. Refer to analytical results in **Table I1** in this **Appendix I**.
Trip Spike	A trip spike sample was collected at a frequency of one per esky (1 in total – QC500). Analysis results were comparable to the trip spike control (TSC) sample. Refer to analytical results in **Table I1** in this **Appendix I**.
Handling and preservation	Samples were placed in a chilled cooler between sampling and analysis. Samples were received in appropriate containers. Sample temperatures of 10.2°C (ALS) and 17.1°C (Envirolab) were outside the recommended temperature (6°C). The elevated temperature is due to samples being sent via overnight courier from Broken Hill back to Sydney and then forwarded by the primary laboratory to the secondary laboratory. Both laboratories noted that ice was present upon receipt of samples. It is considered that the samples were appropriately chilled for most of the transport from Broken Hill to the laboratory in Sydney. The Relative Percentage Differences (RPD) results for primary and inter-laboratory duplicate pairs indicate the results are comparable despite the temperature difference between laboratories. AECOM uses the highest concentration from primary and duplicate pairs for assessment purposes.

1.0 DATA VALIDATION

Project number:	60619153	**Validation by:**	K. Holt	**Date:**	01/02/2021
Client:	AGL Energy Limited				
Site:	74 and 80 Pinnacles Place, Broken Hill, NSW 2880				
Matrix type:	Soil	**Data verified by:**	O. Ferguson	**Date:**	09/02/2021
Samples:	14 primary, 3 rinsates, 1 inter-laboratory duplicate, 1 intra-laboratory duplicate, 1 trip blank and 1 trip spike				
Laboratory:	ALS (Primary Lab) and Envirolab (Secondary Lab)				
Lab reference:	ES2101586 and 259778	**Project Manager:**	R. O'Hara		

Calibration of equipment	Field screening was undertaken using a Photo-ionisation detector (PID), which was calibrated by the supplier prior to use. Calibration certificates are presented in **Attachment F**.
Laboratory QA/QC	
DQOs and DQIs	The data quality objectives (DQOs) and data quality indicators (DQIs) adopted for these works are presented in the report.
Tests requested/reported	All samples were analysed as requested on COC.
Holding time compliance	Samples were extracted and analysed within recommended holding times with the exception of all samples for pH which were 1 day overdue for analysis. This was due to the time taken to get the samples from Broken Hill to the laboratory. It is not anticipated that this non-conformance has impacted the data quality.
Laboratory	The primary laboratory was ALS Environmental Pty Ltd (Sydney) a National Association of Testing Authorities (NATA) accredited laboratory (Accreditation No. 825). The secondary laboratory was Envirolab Services Pty Ltd (Sydney) a NATA accredited laboratory (Accreditation No. 2901).
Frequency of laboratory QC	The primary laboratory (ALS), reported a sufficient frequency of quality control samples, with the exception of the following: • ES2101586: TRH Semivolatile Fraction (DUP) – Actual: 0.00% / Expected: 10.00% • ES2101586: TRH Semivolatile Fraction (MS) – Actual: 0.00% / Expected: 5.00% These results relate to rinsate (water) samples and therefore do not affect the reliability of the soil sample results.
Method Blank	All method blank concentrations were below the LOR.
Laboratory duplicate RPDs	The Relative Percentage Differences (RPD) met the control limits.
QA/QC Data Evaluation	
Laboratory control spike recovery	Laboratory Control Spike (LCS) recoveries met the control limits.
Matrix spike recovery	Matrix Spike (MS) recoveries met the control limits.
Surrogate spike recovery	Surrogate spike recoveries met the control limits.

1.0 DATA VALIDATION

Project number:	60619153	**Validation by:**	K. Holt	**Date:**	01/02/2021
Client:	AGL Energy Limited				
Site:	74 and 80 Pinnacles Place, Broken Hill, NSW 2880				
Matrix type:	Soil	**Data verified by:**	O. Ferguson	**Date:**	09/02/2021
Samples:	14 primary, 3 rinsates, 1 inter-laboratory duplicate, 1 intra-laboratory duplicate, 1 trip blank and 1 trip spike				
Laboratory:	ALS (Primary Lab) and Envirolab (Secondary Lab)				
Lab reference:	ES2101586 and 259778	**Project Manager:**	R. O'Hara		

QA/QC Data Evaluation

Comparison of Field Observations and Laboratory Results	No anomalous results between field observations and analysis results were noted.
Data transcription	A check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.
Limits of reporting	Limits of Reporting were sufficient to enable assessment against adopted human health screening levels.
Field intralab and interlab duplicate RPDs	Field duplicate samples were collected at a frequency of 1 duplicate sample per 20 primary samples. All field duplicate RPDs were reported within control limits (<30%). Refer to analytical results in **Table I1** in this **Appendix I**.

Overall Assessment

Data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

Table I1
Soil Quality Assurance and Quality Control Analytical Results
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

Field_ID	BH004_0.0-0.3	QC100_200112	RPD	BH005_0.4-0.5	QC200_200113	RPD	QC400_200114	QC500_200114	TSC	RPD
Location_Code	BH004	BH004		BH005	BH005		Trip Blank	Trip Spike		
Sample_Depth_Range	0-0.3	0-0.3		0.4-0.5	0.4-0.5					
Sampled_Date_Time	12/01/2021	12/01/2021		13/01/2021	13/01/2021		14/01/2021	14/01/2021	11/01/2021	
Matrix_Type	soil	soil		soil	soil		soil	soil	soil	
Lab_Report_Number	ES2101586	ES2101586	%	ES2101586	259778	%	ES2101586	ES2101586	ES2101586	%

Chem_Group	ChemName	output unit	LOR										
Physio-Chemical Parameters	pH (Lab)	pH Units	0.1	9.1	-	nc	8.6	-	nc	-	-	-	-
Volatile Aliphatic Hydrocarbons	Cyclohexane	mg/kg	1	-	-	-	-	<1	nc	-	-	-	-
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10	<10	<10	nc	<10	<25	nc	<10	73	77	1
	C10-C14 fraction	mg/kg	50	<50	<50	nc	<50	<50	nc	-	-	-	-
	C15-C28 fraction	mg/kg	100	<100	<100	nc	<100	<100	nc	-	-	-	-
	C29-C36 fraction	mg/kg	100	<100	<100	nc	<100	<100	nc	-	-	-	-
	C10-C36 fraction (sum)	mg/kg	50	<50	<50	nc	<50	-	nc	-	-	-	-
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10	<10	<10	nc	<10	<25	nc	<10	88	92	1
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10	<10	<10	nc	<10	<25	nc	<10	39	42	2
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50	<50	nc	<50	<50	nc	-	-	-	-
	>C10-C16 fraction	mg/kg	50	<50	<50	nc	<50	<50	nc	-	-	-	-
	>C16-C34 fraction	mg/kg	100	<100	<100	nc	<100	<100	nc	-	-	-	-
	>C34-C40 fraction	mg/kg	100	<100	<100	nc	<100	<100	nc	-	-	-	-
	>C10-C40 fraction (sum)	mg/kg	50	<50	<50	nc	<50	<50	nc	-	-	-	-
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	<0.2	<0.2	nc	<0.2	<0.2	nc	<0.2	0.4	0.4	0
	Toluene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.5	nc	<0.5	21.3	22.4	1
	Ethylbenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	<0.5	3.3	3.4	1
	m&p-Xylene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<2	nc	<0.5	16.7	17.1	1
	o-Xylene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	<0.5	7	7.1	0
	Total Xylenes	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<3	nc	<0.5	23.7	24.2	1
	Styrene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Isopropylbenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	n-butylbenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	n-propylbenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	p-isopropyltoluene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	sec-butylbenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	tert-butylbenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,2,4-trimethylbenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,3,5-trimethylbenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Total BTEX	mg/kg	0.2	<0.2	<0.2	nc	<0.2	-	nc	<0.2	48.7	50.4	1
Naphthalene	Naphthalene (VOC)	mg/kg	1	<1	<1	nc	<1	-	nc	<1	<1	<1	nc
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0.6	0	0.6	<0.5	nc	-	-	-	-
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.5	nc	-	-	-	-
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2	1.2	0	1.2	<0.5	nc	-	-	-	-
	Total Positive PAHs	mg/kg	0.05	-	-	-	-	<0.05	nc	-	-	-	-
	Naphthalene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Acenaphthene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Anthracene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Fluorene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Phenanthrene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Fluoranthene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	-	nc	-	-	-	-
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	-	nc	-	-	-	-
	Benzo(b+j) & Benzo(k)fluoranthene	mg/kg	0.2	-	-	-	-	<0.2	nc	-	-	-	-
	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.05	nc	-	-	-	-
	Chrysene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Pyrene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<0.1	nc	-	-	-	-
	Sum of PAHs	mg/kg	0.5	<0.5	<0.5	nc	<0.5	-	nc	-	-	-	-
Metals	Arsenic	mg/kg	5	6	5	5	<5	6	nc	-	-	-	-
	Cadmium	mg/kg	1	<1	<1	nc	<1	<0.4	nc	-	-	-	-
	Chromium	mg/kg	2	16	16	0	11	13	4	-	-	-	-
	Copper	mg/kg	5	18	17	1	13	15	4	-	-	-	-
	Lead	mg/kg	5	10	9	3	6	7	4	-	-	-	-
	Mercury	mg/kg	0.1	<0.1	<0.1	nc	<0.1	<0.1	nc	-	-	-	-
	Nickel	mg/kg	2	12	12	0	9	9	0	-	-	-	-
	Zinc	mg/kg	5	32	30	2	21	22	1	-	-	-	-
Halogenated Aromatic Compounds	Bromobenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Chlorobenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	2-Chlorotoluene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	4-Chlorotoluene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,2-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,3-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,4-Dichlorobenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,2,3-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,2,4-Trichlorobenzene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-

Table I1
Soil Quality Assurance and Quality Control Analytical Results
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

Field_ID	BH004_0.0-0.3	QC100_200112		BH005_0.4-0.5	QC200_200113		QC400_200114	QC500_200114	TSC	
Location_Code	BH004	BH004		BH005	BH005		Trip Blank	Trip Spike		
Sample_Depth_Range	0-0.3	0-0.3	RPD	0.4-0.5	0.4-0.5	RPD				RPD
Sampled_Date_Time	12/01/2021	12/01/2021		13/01/2021	13/01/2021		14/01/2021	14/01/2021	11/01/2021	
Matrix_Type	soil	soil		soil	soil		soil	soil	soil	
Lab_Report_Number	ES2101586	ES2101586	%	ES2101586	259778	%	ES2101586	ES2101586	ES2101586	%

Chem_Group	ChemName	output unit	LOR										
Halogenated Aliphatic Compounds	Bromochloromethane	mg/kg	1	-	-	-	-	<1	nc	-	-	-	-
	Dichlorodifluoromethane (Freon 12)	mg/kg	5	<5	<5	nc	<5	<1	nc	-	-	-	-
	Chloromethane	mg/kg	5	<5	<5	nc	<5	<1	nc	-	-	-	-
	Vinyl chloride	mg/kg	5	<5	<5	nc	<5	<1	nc	-	-	-	-
	Bromomethane	mg/kg	5	<5	<5	nc	<5	<1	nc	-	-	-	-
	Chloroethane	mg/kg	5	<5	<5	nc	<5	<1	nc	-	-	-	-
	Trichlorofluoromethane (Freon 11)	mg/kg	5	<5	<5	nc	<5	<1	nc	-	-	-	-
	1,1-Dichloroethene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Iodomethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	-	nc	-	-	-	-
	1,1-Dichloroethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	cis-1,2-Dichloroethene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	trans-1,2-Dichloroethene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,1,1-Trichloroethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,1-Dichloropropene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Carbon Tetrachloride	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,2-Dichloroethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Trichloroethene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Dibromomethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,1,2-Trichloroethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,3-Dichloropropane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Tetrachloroethene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,1,1,2-Tetrachloroethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	trans-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	-	nc	-	-	-	-
	cis-1,4-Dichloro-2-butene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	-	nc	-	-	-	-
	1,1,2,2-Tetrachloroethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,2,3-Trichloropropane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Pentachloroethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	-	nc	-	-	-	-
	1,2-Dibromo-3-chloropropane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Hexachlorobutadiene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
Fumigants	1,2-Dibromoethane (EDB)	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	1,2-Dichloropropane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	2,2-Dichloropropane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	cis-1,3-Dichloropropene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	trans-1,3-Dichloropropene	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
Trihalomethanes	Bromodichloromethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Bromoform	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Chloroform	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
	Dibromochloromethane	mg/kg	0.5	<0.5	<0.5	nc	<0.5	<1	nc	-	-	-	-
Physico-Chemical Parameters	Moisture Content	%	1	17.6	17.2	1	17.6	20	3	-	-	-	-
Exchangeable Cations	Exchangeable Sodium Percent	%	0.2	3.8	-	nc	7	-	nc	-	-	-	-
	Cation Exchange Capacity	meq/100g	0.2	14.7	-	nc	11.7	-	nc	-	-	-	-
	Exchangeable Calcium	meq/100g	0.2	11.2	-	nc	8.5	-	nc	-	-	-	-
	Exchangeable Magnesium	meq/100g	0.2	1.9	-	nc	2.4	-	nc	-	-	-	-
	Exchangeable Potassium	meq/100g	0.2	1	-	nc	<0.2	-	nc	-	-	-	-
	Exchangeable Sodium	meq/100g	0.2	0.6	-	nc	0.8	-	nc	-	-	-	-
Oxygenated Compounds	Vinyl acetate	mg/kg	5	<5	<5	nc	<5	-	nc	-	-	-	-
	2-Butanone (MEK)	mg/kg	5	<5	<5	nc	<5	-	nc	-	-	-	-
	2-hexanone (MBK)	mg/kg	5	<5	<5	nc	<5	-	nc	-	-	-	-
	4-Methyl-2-pentanone (MIBK)	mg/kg	5	<5	<5	nc	<5	-	nc	-	-	-	-
Sulfonated Compounds	Carbon disulfide	mg/kg	0.5	<0.5	<0.5	nc	<0.5	-	nc	-	-	-	-

Table I2
Water Quality Assurance and Quality Control Analytical Results
Broken Hill Energy Storage System
AGL Energy Limited

AECOM

Field_ID	QC300_210112	QC301_210113	QC302_200114
Sampled_Date_Time	12/01/2021	13/01/2021	14/01/2021
Lab_Report_Number	ES2101586	ES2101586	ES2101586
Sample_Type	Rinsate	Rinsate	Rinsate

Chem_Group	ChemName	output unit	LOR			
Total Petroleum Hydrocarbons	C6-C9 fraction	µg/L	20	<20	<20	<20
	C10-C14 fraction	µg/L	50	<50	<50	<50
	C15-C28 fraction	µg/L	100	<100	<100	<100
	C29-C36 fraction	µg/L	50	<50	<50	<50
	C10-C36 fraction (sum)	µg/L	50	<50	<50	<50
Total Recoverable Hydrocarbons	C6-C10 fraction	µg/L	20	<20	<20	<20
	C6-C10 fraction (minus BTEX)(F1)	µg/L	20	<20	<20	<20
	>C10-C16 (minus Naphthalene)(F2)	µg/L	100	<100	<100	<100
	>C10-C16 fraction	µg/L	100	<100	<100	<100
	>C16-C34 fraction	µg/L	100	<100	<100	<100
	>C34-C40 fraction	µg/L	100	<100	<100	<100
	>C10-C40 fraction (sum)	µg/L	100	<100	<100	<100
Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	1	<1	<1	<1
	Toluene	µg/L	2	<2	<2	<2
	Ethylbenzene	µg/L	2	<2	<2	<2
	m&p-Xylene	µg/L	2	<2	<2	<2
	o-Xylene	µg/L	2	<2	<2	<2
	Total Xylenes	µg/L	2	<2	<2	<2
	Total BTEX	µg/L	1	<1	<1	<1
Naphthalene	Naphthalene (VOC)	µg/L	5	<5	<5	<5
Metals	Arsenic	mg/L	0.001	<0.001	<0.001	<0.001
	Cadmium	mg/L	0.0001	<0.0001	<0.0001	<0.0001
	Chromium	mg/L	0.001	<0.001	<0.001	<0.001
	Copper	mg/L	0.001	<0.001	**0.004**	<0.001
	Lead	mg/L	0.001	<0.001	<0.001	<0.001
	Mercury	mg/L	0.0001	<0.0001	<0.0001	<0.0001
	Nickel	mg/L	0.001	<0.001	<0.001	<0.001
	Zinc	mg/L	0.005	<0.005	**0.018**	<0.005